

AMERICAN ARTISAN

RESIDENTIAL AIR CONDITIONING • WARM AIR HEATING • STEEL METAL CONTRACTING



- Portions of the heating and ventilating system in the new Milwaukee Arena. Curving exhaust ducts under the roof expel used air. Warm air is discharged from grilles high on the far wall.

- Plans for control of the warm air industry in case of emergency are reported in this issue.

- An expensive accessory like the electric filter can be sold but requires adroit merchandising.

- A large 11½ acre warehouse heated by 19 suspended warm air units is described in detail.

- Benjamin Fairless of U. S. Steel analyzes the present and future steel supply picture.

CHEAPER IN THE LONG RUN

...the Sheet Metal with HIGH Rust-Resistance

Despite the fact that Toncan Iron may be a little higher in price than common ferrous materials frequently used for the same type of work . . . it is cheaper in the long run both for client and sheet metal contractor.

WHY? . . . To quote the men who use it, "... because Toncan Iron *works easier* on the bench . . . has no hard spots . . . doesn't flake. It lasts longer . . . scores of our jobs have stood up twenty years and more. It is a *better buy* for our customers."

Not a steel—and not merely a copper-bearing iron—Toncan Iron is the only sheet metal combining refined open hearth iron with twice as much copper as copper-bearing steels and irons, plus molybdenum in the right proportion to bring out the full effectiveness of the copper.

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REPUBLIC STEEL CORPORATION

GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, N. Y.

for **40** years . . . HIGHEST RUST-RESISTANCE
OF ALL FERROUS MATERIALS IN ITS PRICE CLASS



It's here!



A new improved line of usAIRco Unit Heaters!

MORE built-in value.

MORE models to choose from.

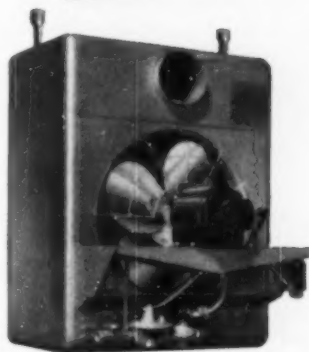
MORE exclusive features.

MORE attractive appearance.

Yes, there's **MORE** of *everything* in the new usAIRco Unit Heaters.

You'll want to *see* the revolutionary design . . . to *compare* performance for efficiency and economy.

A FEW CHOICE DISTRIBUTORSHIPS FOR GAS FIRED UNIT HEATERS ARE STILL AVAILABLE



Engineers and manufacturers of air conditioning, refrigeration, unit heaters, coils and ventilating equipment.

UNITED STATES AIR CONDITIONING CORPORATION
3310 Como Ave. S. E., Minneapolis 14, Minn.

Please send me additional information about usAIRco Unit Heaters. I'm interested in ☐ Gas Fired Unit Heater ☐ Steam Unit Heater ☐ Franchise details.

Name

Address

City Zone State

AMERICAN ARTISAN

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RESIDENTIAL
AIR CONDITIONING
WARM AIR HEATING
SHEET METAL CONTRACTING

Merged with American Artisan are "Warm Air Heating" and "Furnaces and Sheet Metals"

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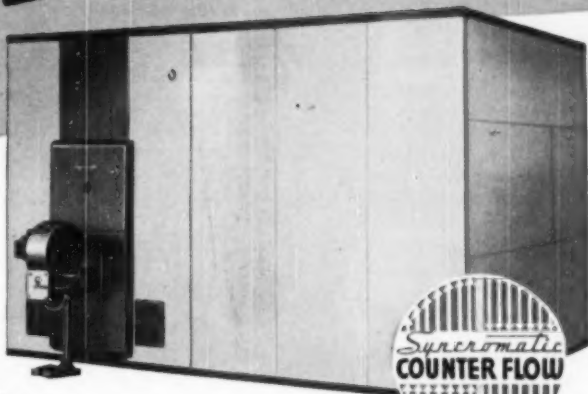
Founded 1864

OCTOBER, 1950

Volume 87, No. 10

AMERICAN ARTISAN, OCTOBER, 1950

From



TO

60,000 B.T.U.'s

1,000,000 B.T.U.'s

For **OIL • GAS or COAL**
SYNCROMATIC

CAN FILL YOUR NEED AND GIVE THE SAME HIGH OPERATING EFFICIENCY REGARDLESS OF SIZE. IN ALL SYNCROMATIC UNITS YOU GET THE SAME HIGH QUALITIES AND EXCLUSIVE FEATURES IN COUNTERFLOW DESIGN AND HEAT TRANSFER.

Syncromatic offers you

1 **EXCLUSIVE PATENTED COUNTERFLOW DESIGN.** Produces efficiencies over 80% for all fuels.

2 **STURDY UNEQUALLED FURNACE CONSTRUCTION.** No heat exchanger lighter than 10 Gauge steel insures long operating life.
UNUSUAL FLEXIBILITY in conversion.

3 **EASE OF INSTALLATION.** Whether large or small **SYNCROMATIC** has been designed to meet the installers problems to save time and needless expense.

4 **PERFECTION IN COMBUSTION.** Because of **SYNCROMATIC'S** unusual smooth flowing heat trap counterflow design it is not necessary to restrict combustion gases in manner resorted to normally to obtain high overall efficiency. As a result in spite of high efficiency **SYNCROMATIC** does not experience combustion problems resulting from internal restrictions. **ANY** good gun type high pressure or low pressure oil burner can be adapted to **SYNCROMATIC** oil fired furnace.

5 **PRICED COMPETITIVELY.** In spite of high quality heavy construction **SYNCROMATIC IS PRICED COMPETITIVELY** for today's market.

Syncromatic Corporation
 WATERTOWN, WISCONSIN

the editor's notebook

Puzzle Department

Nothing takes the mind off business problems, politics, or the income tax like a mystery thriller or a tantalizing puzzle. Solution of mathematical problems has been a form of mental recreation that has endured for ages and today it continues as a means of relief from the daily tension.

On the last page of this column is a problem involving the height of a ladder which promises to whet the appetite of readers who enjoy this form of mental diversion. Practical readers may ask why it is necessary for Mr. Fixit to solve the problem when all he has to do is set a ladder up against the building and solve the problem by trial, observing or measuring how high it will reach. But, dear reader, Mr. Fixit doesn't have a ladder. Also, he is confined for storage space in his garage. Anything over 20 feet would stick out of the door. Yes, he could buy an extension ladder and solve his enigma, but we are imposing the restriction that he does not want an extension ladder. The problem requires mathematical solution because Mr. Fixit wants to know how far a 20 foot ladder will reach before he buys it. He knows the height to the apex of his ranch house.

We guarantee it will sweep the cobwebs out of your mind and that you will forget business for x hours. And we also guarantee the problem is soluble.

We suggest not to burn the midnight oil more than about three nights, unless you are relentless. Send us the answer that you believe is correct along with your method of solution. Names of mathematical wizards submitting the

AT-A-GLANCE TANK GAUGES

- ✓ Accurate capacity reading
- ✓ Clear, long range visibility
- ✓ Patented, heavy duty plastic dome . . . Shockproof and breakproof
- ✓ No complicated mechanism
- ✓ Durable construction
- ✓ Withstands air pressure in excess of 100 lbs. per sq. inch
- ✓ Factory adjusted
- ✓ Guaranteed leakproof
- ✓ Underwriters' listed

CHECK THESE

Sentry FEATURES
FOR BETTER PERFORMANCE

SENTRY DRAFT CONTROLS

- ✓ Sensitive operating action
- ✓ Completely automatic operation
- ✓ Non-corrosive brass bearings
- ✓ Easy to install . . . quickly!
- ✓ Factory adjusted for accuracy
- ✓ Durable, rugged construction
- ✓ No servicing necessary
- ✓ Full range of sizes from 6" to 12"
- ✓ Underwriters' listed
- ✓ Fully warranted and guaranteed

On guard
24 hours
a day!



Write  for descriptive literature

KRUEGER *Sentry* GAUGES

GREEN BAY • WISCONSIN

the editor's notebook

correct answer and solution will be published. The correct answer and the solution will be sent to all who submit wrong answers.

What They Said

OTTO A. SEYFERTH, president, Chamber of Commerce of the United States, in a news release:

"When government asks of its people that they make sacrifices, the people have a right to demand of the government that it, in turn, likewise take up some notches in its belt."

PROFESSOR SUMNER SLICHTER of Harvard University, in an article in *New York Times* magazine:

"The government is asking people to refrain from unnecessary spending. It should practice what it preaches."

GWILYM A. PRICE, president of Westinghouse Electric Corporation, in a letter to stockholders:

"If we are to keep our economic system strong enough to stand up under the strains it must now meet — if we are to avoid defeat through bankruptcy — then there is no room for business as usual."

"If taxes are to be higher, the common good dictates that the increase must go solely for the protection of our country and not for disguised handouts or for overstaffing government bureaus."

BENJAMIN F. FAIRLESS, president of United States Steel corporation issued the following statement:

"Stories have reached us that certain individuals, purporting to be representatives of United States Steel, have stated the willingness of the corporation and its subsidiaries to sell steel at a premium to certain customers, or otherwise to engage

IT'S A KNOCKOUT



IT'S CHAR-GALE'S LOW-COST PACKAGE PROGRAM

**MORE PROFITS
WITH CHAR-GALE
PACKAGED
FITTINGS**

*Write—Wire or Phone Us
or ask your Jobber*

CHAR-GALE MANUFACTURING CO.
MINNEAPOLIS-OMAHA

PACKAGED FITTINGS



Get your fittings from Char-Gale in time-saving, easy to handle packages. Say goodbye to jumbled bins, damaged fittings, and wasted storage space.

JOIST PANNING



Neatly packaged Char-Gale joist panning is already cut to size and has formed end for fast, easy fitting. Save time — save metal — save money the low cost Char-Gale way

UNIVERSAL PLENUM



The Char-Gale pre-formed universal plenum can be trimmed to size, assembled, and installed—all on the job—in a matter of minutes! Each plenum is individually packaged for your convenience

PROJECT PACKS



Char-Gale project packs contain all the necessary Warm Air Fittings for one unit dwelling. Another package contains all Return Air Fittings. These handy packages are designed to meet, and beat, rising costs. They save time—yet cost no more.

*the editor's
notebook*

in grey market transactions in these days of heavy steel demand. I want to deny categorically that these individuals have any authority to speak for the corporation. The policy of United States Steel continues to be one of selling steel only directly to bona fide customers at regular published prices. United States Steel will decline to make further sales to any purchaser who is found to have resold in the grey market steel bought from the corporation."

Relaxed

Officials in Washington aren't quite as tense nowadays as they were when fighting in Korea first set Americans off on a buying spree.

The buying spree stripped store shelves of some articles, causing temporary shortages and price increases even when more goods were readily available in warehouses. The result was that voters in all sections of the country began writing their representatives in Congress to demand action that would tend to hold down prices.

This being an election year, the letters brought a prompt response. The House passed a controls bill which, according to its critics, could be used by the administration to socialize industry.

However, by the time the bill got to the Senate, the public attitude showed a change. Assurances from businessmen and manufacturers to the effect that no serious shortages were in sight slowed down scare buying. Complaints from angry voters dropped off. Demands for controls slackened.

The result was that more than 50 amendments to the



Check these FEATURES

✓ ATTRACTIVE

Extremely modern design and pleasing appearance

✓ DURABLE

Sturdy construction eliminates vibration for longer operation

✓ ECONOMICAL

Low on first cost—low on operating cost.

✓ DEPENDABLE

A reputation for trouble-free operation throughout the years.

✓ EXTREMELY QUIET

Heavy housing and cushion mounted motor absolutely eliminates noise.

✓ LOW PRICED

Quality-built — yet bigger, better production methods keeps price down!

It's got them all...

Sundstrand
OIL BURNER

SUNDSTRAND ENGINEERING COMPANY
ROCKFORD, ILLINOIS, U. S. A.

*the editor's
notebook*

controls bill were offered in the Senate almost immediately.

One amendment proposed a change in the definition of national defense on the ground that the term is so broad that the bill could be used for general economic control, on the theory that nearly everything done in the country has some relation to national defense.

Some senators found other objectionable features in the bill. Senator Taft, for instance, objected to giving the President standby powers to put price control and rationing into effect whenever he chooses. He said Congress should determine when price control and rationing should become effective, if at all.

The Defense Production Act of 1950 provides the President with the authority to accomplish required adjustments in the operation of the economy, "within the framework, so far as practicable, of the American system of competitive enterprise."

Housing Curbs

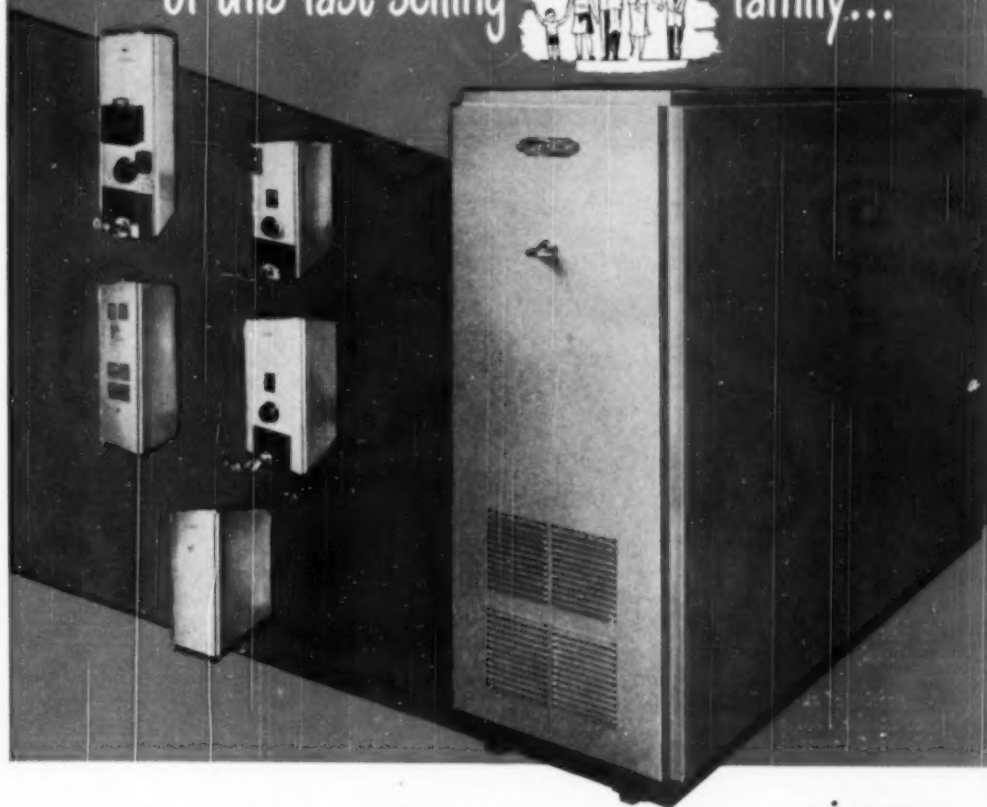
Too many persons are confused by presidential curbs on housing.

This is the belief of Clifford L. Rawson, secretary-manager, Home Builders Institute, who pointed out that these curbs are not prohibiting the construction of homes by builders or individuals.

There are no controls on sales prices of homes or building materials, nor are there any controls or allocations of building materials, according to Rawson.

He said that the curbs were put into effect merely to take the bloom off the housing boom, which was done by

Meet a new member
of this fast-selling family...



the Ko-Z-Aire 140 Winter Air Conditioner

THIS ruggedly-constructed, handsomely-finished 140 Series is KO-Z-AIRE's latest addition to the warm air heating line that's "stealing the show" with both dealers and home-owners.

For here, as in all models, KO-Z-AIRE engineers have outdone themselves to give you faster, easier sales, incorporating smart Advance Design styling into a factory-assembled, easy-to-install unit, with automatic controls, one piece, dust-leak proof welded steel base, and removable clean-out panels.

And you'll find a full range of sizes in both gas and oil-fired gravity and forced air equipment priced to sell—backed by new marketing policies which assure faster, more experienced service to distributors and dealers.

Much else goes with KO-Z-AIRE units to assure dependable, trouble-free, economical operation—minimized servicing problems. So, better not stop with looking, better send today for complete details about KO-Z-AIRE's Progressive Profit Program for dealers. Sure as sunrise you'll be money ahead in years to come.

Gas and Oil Fired Units from 70,000 to 450,000 BTU Input Available. Some Choice Dealer and Distributor Territories Still Open . . . Write Today!

KO-Z-AIRE

KO-Z-AIRE, Inc., Dept. AA-10 GENERAL OFFICES — RED OAK, IOWA • REPRESENTATIVES IN PRINCIPAL CITIES

the editor's notebook

tightening up liberal credit terms.

"The Federal Housing Administration now gives five per cent less insurance on mortgage money lent by banks to builders or home buyers," Rawson continued. This means that the buyer must pay five per cent more cash to buy the house today than he did a short while ago."

Promotion

An important part of the promotional campaign being conducted by the anthracite industry is the exhibit of modern anthracite heating equipment at strategic fairs, building and heating shows, and other expositions where it will be viewed by potential prospects. These exhibits will supplement the newspaper and television advertising that is already scheduled.

The first of the series of exhibits took place at the New York State Fair at Syracuse, during the period from Sept. 2-9. It was estimated that over 300,000 people passed through the building which housed the anthracite exhibit. Since the equipment display was centrally located it is logical to assume that most of the visitors saw it.

Sales Course

In a new approach to the problems of industry a Detroit, Mich., trade school has scheduled a course in salesmanship this fall. Departing from the strictly technical aspects of trade school training, Detroit Air Conditioning Institute offers a new course, "Selling Air Conditioning."

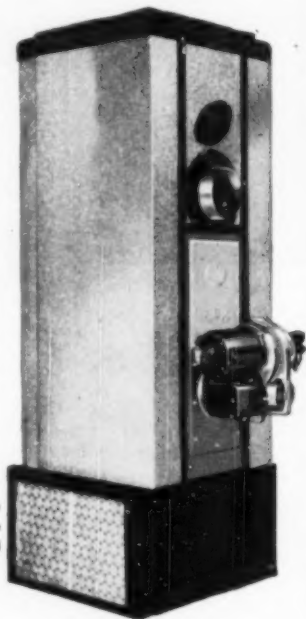
Selling today is a profession, and to sell in today's market, a person must be well



STANDARD HI-BOY FURNACE The Space Saver for Small Homes

This SUN Standard Hi-Boy model requiring no more space than an average closet fits into any recess or odd corner. It is entirely accessible from the front for easy installation and servicing. Scientifically designed and engineered for highest efficiency and low operating cost. A complete Winter Air Conditioning unit for the small home. Choice of Gun or Evaporative burner.

3 Capacities
65,000
85,000
100,000
b. t. u.



Write for complete literature on these and other SUN furnaces.

J. V. Patten Company
SYCAMORE, ILLINOIS, U. S. A.
ESTAB. 1888 • INC. 1928

the editor's notebook

qualified in the broader aspects of the sales task, according to George H. Clark, the institute's director. Mr. Clark pointed out that the aim of the institute is to provide a training for salesmen in vital selling essentials to aid in the marketing of air conditioning, refrigeration, and heating equipment. "To be successful in selling these products", he said, "men must have a technical background, which is provided in the technical course."

The institute's sales training will be related to the technical course so as to allow the salesman to use his engineering skills as a working sales tool. Instruction will combine classroom and laboratory training. Extensive use will be made of audio-visual aids. Guest speakers will include sales and engineering executives from all branches of the air conditioning, refrigeration and heating industry. Regular instructors will be men of the industry with qualifications as salesmen or technicians, or both.

Price Wars

Price competition never yet improved conditions in any industry. Any policy that destroys a living profit is harmful in the end to all concerned—the public included. For nothing means so much to long-term public welfare as prosperous industries that maintain full employment at fair wages, conditions which price wars make impossible.—*Press Proofs.*

Unions Grow

The United States Bureau of Labor Statistics estimates union membership at between 14 and 16 million in a new directory



A prominent display of Field Draft Controls draws store traffic, provides leads for the sale of major equipment as well.

LIGHT AIR MAKES HEAVY SALES

One thing every heating plant needs — as original equipment, as an accessory, or as a replacement part — is a barometric draft control. Without a draft control, excessive drafts cause fuel waste, overheating, uneven heating, furnace damage. So keep your Field Draft Control line on display, list Field Draft Controls in your advertising, talk Field Draft Controls on your floor.

The Field Barometric Draft Control is already provided as standard equipment on most leading heating lines. It therefore is the logical, favorite replace-

ment control. And to cover the major market offered by hand-fired furnaces, Field has developed the "Barochek" — a combination check damper and barometric draft control which can be converted for use on an oil-fired installation later.

The Field Control line keeps you in touch with your market. The Barochek in particular gets you into hand-fired basements — where automatic heat is needed and can be sold, where other major equipment, like hot water heaters, can also be sold.



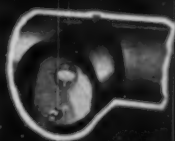
Literature neatly and prominently displayed does a silent selling job on store traffic.



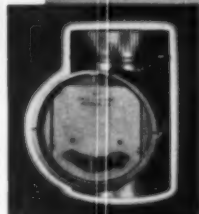
Installing a Field Control manufactured by Field Control Division, Mendota, Illinois.

field
means finest in
DRAFT CONTROLS
... And There's A Field
Control For Every Need!

field
TYPE
M



First and finest for all types of automatic heating equipment.



field
TYPE
R

First and finest for all types of space heaters and ranges.

field
BAROCHIK



First and finest for hand-fired furnaces and boilers, a combination check damper and barometric draft control.



field
FUEL
SAVING SYSTEM

A newer, finer, more trouble-free damper-motor set with automatic spring return, built-in limit control, "stoke-switch", and booster fan switch.

WRITS for proof of why Field is First and Finest — first choice for the finest in heating equipment.

field CONTROL
DIVISION
H. B. CONKEY & CO., MENDOTA, ILL.

AFFILIATES:

Conco Building Products, Inc.
Brick Tile Store
Conco Materials Handling Division
Cranes Etc.

the editor's notebook

of labor unions issued recently.

One uncertainty is CIO. It claimed 6 million workers in the 1948 directory. CIO recently expelled six left wing unions of unknown total membership. Twenty seven of the CIO'S 33 unions furnished membership figures for the new directory, and these claims add up to 4,052,000.

The AFL announced in 1949 that it was receiving per capita taxes on 7,241,290 members. The bureau said in the new directory that 92 of the AFL'S 107 unions made separate membership reports for the directory which total one million more than their per capita tax figures.

Encouragement

Twelve employees of Dravo Corp., Pittsburgh, Penn., have been awarded \$500 in cash prizes for the best entries in the company's 11th annual technical papers contest. This competition is designed to encourage employees to prepare articles for publication in magazines or presentation before technical and trade societies.

Bog Runners?

A group of Minnesota congressmen recently sponsored a bill to authorize federal funds for experiments in the development and use of peat as a commercial fuel. Minnesota has a supply of swamp bogs from which peat could be dug, dried and blocked.

The House public lands committee recently held a one-day hearing on the bill but no further action has been taken.

A Department of Commerce representative saw little need for the bill explaining:

"In the light of our known fuel reserves and especially in

venturi-flo CEILING OUTLETS



MODEL "J"



ADJUSTABLE
AIR
PATTERN
+
INTEGRAL
VOLUME
CONTROL

LOW NOISE LEVEL
LOW PRESSURE DROP
ENGINEERED FOR COM-
FORT CONDITIONING
FLUSH MOUNTING
SUPPLY AND EXHAUST
COMPLETE RANGE
OF SIZES

Model "J" VENTURI-FLO Ceiling Outlets are available with a built-in volume control as shown above. Blades are gang-operated and opposed-blade design provides positive air control and uniform distribution of air in throat of outlet. A concealed adjusting lever is accessible after unit is placed in service. Model "J" Ceiling Outlets provide adjustable air pattern over a wide range by means of a key socket which raises or lowers the inner assembly. For full information, see your Barber-Colman representative or write for Bulletin F-4085.



BARBER-COLMAN COMPANY
1226 ROCK STREET, ROCKFORD, ILLINOIS

the editor's notebook

light of the availability of large reserves of higher grade fuels, it is not likely that the present and future supply and demand situation would justify expenditures for research on the utilization of peat for the purpose of transporting and marketing the commodity as a fuel in competition with higher grade coals, oil, and gas."

The Turn of The Century

Extravagant claims of performance are not a recent development. In the Jan. 7, 1899 issue of AMERICAN ARTISAN, the Smead Heating and Construction Co., Toledo, Ohio, was describing its Electric Air Compressor in the following terms:

"Will save one third your fuel, as it utilizes all heat units generated.

"Will enable you to warm distant rooms.

"Will ventilate in winter and ventilate and cool your house in warm weather."

There were other features, too, for only \$35.00.

Puzzle

While planning for the material and equipment required for painting his house, Mr. Fixit noted that a canopy projecting horizontally over a side entrance door was directly under the apex of a gable. Since he could store a ladder with a maximum length of only 20 feet, he was confronted with the problem of determining whether this length would reach high enough to paint the apex of the gable. How high would a 20 foot ladder reach when resting on the ground and making contact with the canopy and wall?

The canopy is 12 feet above the ground and extends 3 feet from the wall.

Different Users Say It Differently

but it all adds up to this:

LOCKFORMERS *are Money-Makers*

"My Lockformer paid for itself three times over the first year I had it!"

"... had our Lockformer for almost six years and haven't spent a cent on repairs yet!"

"Our Lockformer has reduced our fabrication costs over 50%."

"... has doubled the capacity of our shop!"

"Our Lockformer puts us on an even footing with the biggest shop in town..."

"We're landing a bigger percentage of the jobs we bid on..."

16
MEN
AND
8
BRAKES
OR

ONE MAN AND
LOCKFORMER

THE LOCKFORMER CO.

4615 WEST ROOSEVELT ROAD • CHICAGO 50, ILLINOIS



HEAT MAKERS

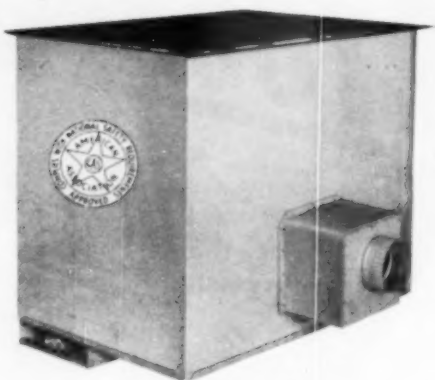
Easy to Install — Simple to Operate

Gas-Fired FLOOR FURNACES

A Size for Every Home Heating Requirement

Small Floor Grille • Fool Proof
Simple to Operate • AGA Approved
Sturdy Construction

SIZES {
30,000 Btu input
35,000 Btu input
50,000 Btu input
50,000 Btu input
(Conventional)
85,000 Btu input
(Conventional)



— Easy to Sell —

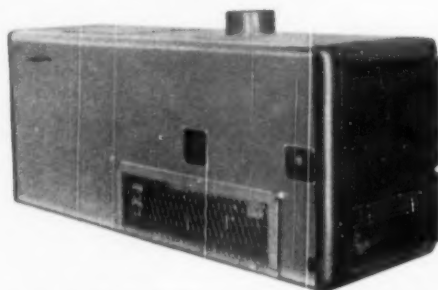
John Zink Central GAS HEATERS

Here is truly a universal, efficient, simple, and compact CENTRAL HEATING UNIT. Fully automatic, it is a complete packaged unit ready for installation. The two heaters shown are almost identical in operation and design of the heat exchanger. The two different types of casings are furnished to meet requirements for a particular application.

Heaters may be installed in the basement, attic, service closet, or utility room of a home. The AF-110 may be installed even under the house if certain provisions are made for the draft diverter. For industrial applications, it may be installed on a shelf or balcony; as a suspended heater and as a duct heater.

Each John Zink Central Gas Heater is equipped with an automatic safety shut-off that is really automatic.

The John Zink Central Gas Heater is designed as a winter air conditioner with a summer switch to provide air circulation during warm weather.



— MAIL COUPON TODAY —

JOHN ZINK CO., 4401 So. Peoria, TULSA, OKLA.

Without obligation, please send me literature on
FLOOR FURNACES ☐ CENTRAL HEATERS ☐

Name _____

Company _____

Address _____

City _____

Zone _____

State _____

JOHN ZINK COMPANY

4401 SOUTH PEORIA

TULSA, OKLAHOMA

How to Win the Business Bidder

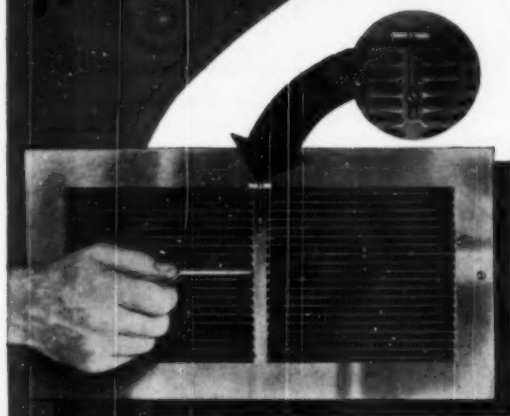
ON THOSE LARGE VOLUME JOBS

IN the majority of cases, the fellow that can offer **QUALITY** as well as price is the bidder that lands the big jobs, and that's where users of H&C registers have a decided advantage.

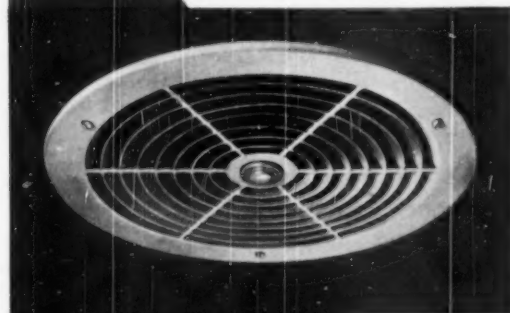
The No. 74 Design Air Conditioning register lets you get right down to bed-rock price and yet in quality construction, workmanship and appearance it is unsurpassed by any register in its class. It may be quickly adjusted to any desired upward or downward deflection. Its valve is smooth in operation and stays put under all conditions. Its simple, trouble-free volume control permits balancing at the register face if desired. Sponge rubber gasket provides perfect seal between register and wall. Duct flange prevents interference with stackhead and simplifies installation. Available in attractive neutral shade prime coat (infra-red baked) or, at no extra cost, METALUSTRE, a superb soft-toned metallic finish. You'll find this register a big help in landing those housing project jobs.

H&C Ceiling outlets have been carefully engineered for use with residential and small commercial packaged heating units. They are made in 5 popular sizes (6", 8", 10", 12" and 14") and are furnished complete with removable flange, sponge rubber gasket, baked prime coat finish. And although they are competitively priced they are the finest you will find in appearance, effectiveness, quality construction and convenience of installation. Volume may readily be controlled by means of our No. 19 damper kit. See your H&C **JOBBER** or write for complete details.

H&C the line that provides the ideal register for every type of installation.



H&C No. 74 A.C. Register—
Ideal for low-cost housing projects.



H&C Ceiling Outlet—Perfect for use with packaged Heating Units.



HART & COOLEY

MANUFACTURING COMPANY, 500 EAST EIGHTH ST., HOLLAND, MICH.
IN CANADA: HART & COOLEY MFG. CO., FT. ERIE, N. ONTARIO

WORLD'S LARGEST PRODUCERS OF REGISTERS, GRILLES, AND FURNACE ACCESSORIES

what's in a **N**ame?



A good name is a magnet. People will flock to see a name-actress or name-singer, a name-ball-player or a name-boxer.

Name-stars in any field earn this public approval by consistently turning in a fine performance—and so does a product.

For 49 years Kalamazoo products have been giving their buyers honest value. That's why people trust the Kalamazoo name. That's why a Kalamazoo Dealer is handling "pre-sold" products which people want to buy—because they trust the Kalamazoo name.

**New Warm Air Conditioner
is today's big seller—
because it burns OIL or GAS!**

And it burns EITHER fuel at peak efficiency! Thrifty with oil and thrifty with gas—a real boon to today's worried buyers! And a powerful, timely selling feature!

Oil or gas burner is quickly installed—and, once installed, it's easy to convert to the other fuel.

Yes, this sensational new Kalamazoo Convertible smooths away all worries about fuel shortages . . . No need to force homeowners into a gamble on one fuel against another! No need to stock 2 lines! 75,000 to 140,000 BTU input ratings for gas. 81,500 to 135,500 BTU input ratings for oil.

NEW CONVERTIBLE
Ends Fuel
Jitters!

DEALERSHIPS AVAILABLE! The Kalamazoo Line is outstanding in advanced engineering and construction. It includes Oil, Gas and Coal Warm Air Conditioners and Gravity Furnaces, Gas Conversion Burners, Oil Conversion Burners, Stokers, Blowers, Filters, Registers, Fittings, and Automatic Controls. All priced and discounted for maximum distributor and dealer profits.

FOR COMPLETE INFORMATION WRITE THE KALAMAZOO STOVE & FURNACE CO., 453 MICHIGAN AVE., KALAMAZOO, MICH.

KALAMAZOO
HEATING EQUIPMENT



**3-Fuel Winter
Air Conditioners**



**3-Fuel Gravity
Furnaces**

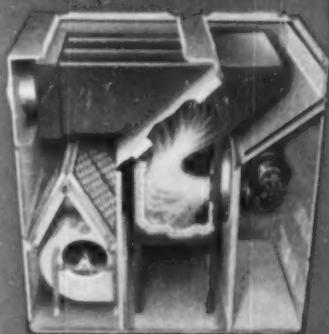


**Gas Gravity
Furnaces**

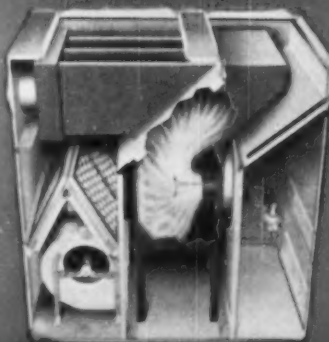


ADVERTISED IN
LIFE

IT BURNS OIL!



IT BURNS GAS!



ANNOUNCING Honeywell's **TM**

ONE *Chronotherm circuit* FOR ALL APPLICATIONS*

THE advantages are all yours with Honeywell's new Universal TM Chronotherm. It saves your time, simplifies stocking, and adds to your selling and installation convenience. The Standard Chronotherm—for new installations and modernization jobs—and the Plug-In Chronotherm for replacement on existing installations—are adaptable to all automatic gas, oil and stoker applications.

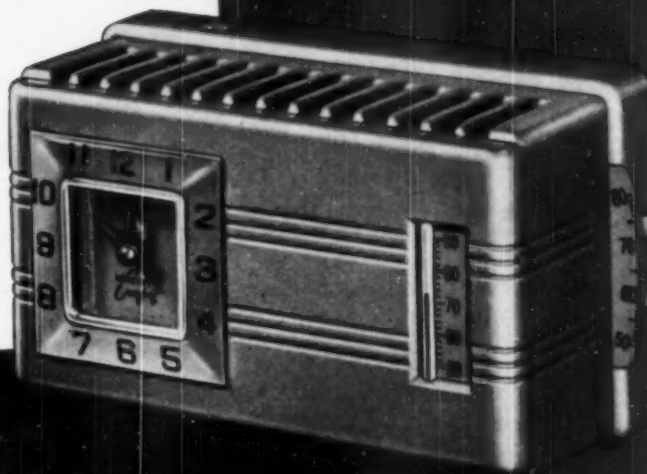
Equipped with the precision quality of Thermostat Magic, this new Universal TM Clock Thermostat offers the comfort factor of automatic nite-set-back, plus automatic return to desired daytime temperatures. Constant research and laboratory testing have brought

about the Universal TM Clock Thermostat. The objective was to simplify the ordering and handling of Honeywell's former Chronotherm models—reduce installation, stocking and inventory problems, and create *one* basic model *only*, for all automatic heating applications.

Order your stock now. Start to swing your inventory to just one convenient model—the Honeywell Universal Chronotherm! Minneapolis-Honeywell, Minneapolis 8, Minnesota . . . In Canada: Toronto 17, Ontario.

*Designed to fit ALL automatic heating applications, Honeywell's TM Universal Clock Thermostat is engineered and tested to give you the finest thermostat money can buy — at no extra cost to you.

MINNEAPOLIS
Honeywell
FIRST IN CONTROLS



it's
**Thermostat
Magic**

**EASIER
TO SELL**



**ELIMINATES
STOCKING
PROBLEMS**



**MAKES
INVENTORY
SIMPLE**



**NO MORE
MATCHING
OF HEATERS**



**NEW
SIMPLIFIED
INSTALLATION**



Now, FOR THE FIRST TIME . . .

One Chronotherm packaged two ways for your convenience. The TM 848A Plug-In for replacement jobs — the TM 850A for all new or concealed wiring installations. Makes stocking, selling and installation . . . Simple as A B C.

....INCREASE YOUR SALES!



DRAVO HEATERS...

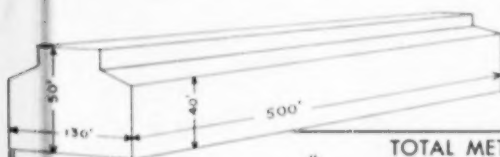
AS WELL AS MONEY....FUEL...

Heating system steel needs *can* be slashed from 50% to 70% for the representative open-space industrial structure shown below . . . by using the direct-fired warm air heating method with Dravo "Counterflo" Heaters! This conservation, of vital importance today, adds another to the long list of economies in money, fuel and labor effected by this heating method.

The chart below gives the detailed comparative story. Every system is equivalent in Btu output. Steel requirements for the 13 methods have been carefully and conservatively calculated.

It will be noted that Dravo Heaters not only take **LESS** steel in each fuel classification . . . but that the **HIGHEST** steel requirement in a Dravo installation is almost 50% less than the **LOWEST** steel requirement in any other system. Of special significance is the contrast in *pipe* required. Jobs now held up by slow pipe deliveries can **MOVE** . . . if Dravo Heaters are used!

Any time that **YOUR** jobs are delayed or deferred because of steel or pipe shortages, why not find out how Dravo "Counterflo" Heaters are expediting things for other users? And remember — steel savings are just *one* of the reasons that more and more Dravo "Counterflo" Heaters are heating increasing numbers and types of structures. You'll find many other good reasons listed at right, that will appeal to you.



Each heating system compared below was sized to make up a calculated 12,000,000 Btu heat loss in this representative industrial building.

COMPONENT	TOTAL METAL REQUIREMENTS FOR VARIOUS HEATING SYSTEMS						
	GAS FIRED					OIL	
	DRAVO WARM AIR	HIGH PRESSURE CONVENTIONAL WATER TUBE BOILER	HIGH PRESSURE PACKAGED STEAM GENERATOR	LOW PRESSURE CONVENTIONAL WATER TUBE BOILER	LOW PRESSURE PACKAGED STEAM GENERATOR	DRAVO WARM AIR	HIGH PRESSURE CONVENTIONAL WATER TUBE BOILER
BASIC HEAT GENERATORS	26,400	38,000	62,000	38,000	62,000	26,400	38,000
PIPING—Oil—Steam Boiler Room—Gas	9,096	15,490	15,490	35,308	35,308	4,352	15,790
TANKS—Oil—Blow-off Condensate		3,500	1,500	1,500	1,500	13,000	16,500
UNIT HEATERS including Traps & Starters		21,240	21,240	21,240	21,240		21,240
STACKS & BREECHING	1,200	4,000	400	4,000	400	1,200	4,000
PUMPS—Fuel Oil Auxiliary Oil—Boiler Feed		1,000	1,000	1,000	1,000	400	1,400
STOKERS & FANS— including Dust Collectors Fuel Oil Preheaters							2,000
STRUCTURAL STEEL Boiler House Foundation Reinforcing		7,000	2,000	7,000			7,000
TONS of STEEL REQUIRED	DRAVO 18	45	52	54	61	DRAVO 23	53

..SAVE STEEL

. AND MAN HOURS

DISTRIBUTION PIPING AND DIFFUSERS
COMPLETELY ELIMINATED

LEAST STEEL PER 1,000,000 BTU OUTPUT

NO VALVES, TRAPS OR FITTINGS

STAINLESS STEEL CHAMBER
ELIMINATES REPLACEMENT

DRAVO CORPORATION

HEATING DEPT., DRAVO BUILDING, PITTSBURGH 22, PA.

Sales Representatives in Principal Cities.

Mfd. and Sold in Canada by Marine Industries, Ltd., Sorel, Quebec.

**DRAVO HEATERS HAVE
EARNED HIGHEST ACCEPT-
ANCE BECAUSE THEY**

- use less steel
- eliminate distribution piping
- have lower initial cost
- are very efficient in fuel consumption
- concentrate comfort heat at the working level
- reduce roof heat losses
- burn gas or oil
- are available in coal burning models
- save man hours through automatic operation
- require no attendant and negligible maintenance
- produce heat instantly and ONLY when needed
- have stainless steel chambers for longer life
- prevent rust and stain conditions in metal storage
- bear UL label and AGA approval
- require only stack, fuel and power line
- are portable and readily moved
- provide year 'round ventilation
- are ideal for process drying
- avoid freeze up worries, leaky traps, valves, etc.
- are shipped complete and flame tested
- can be installed on floor, wall or roof
- can be mounted upside down or horizontally
- eliminate ductwork with 150 ft. air throw

WITH IDENTICAL 12,000,000 Btu LOAD

FIRED			COAL FIRED		
HIGH PRESSURE PACKAGED STEAM GENERATOR	LOW PRESSURE CONVENTIONAL WATER TUBE BOILER	LOW PRESSURE PACKAGED STEAM GENERATOR	DRAVO WARM AIR	HIGH PRESSURE CONVENTIONAL WATER TUBE BOILER	LOW PRESSURE CONVENTIONAL WATER TUBE BOILER
62,000	38,000	62,000	27,450	38,000	38,000
15,790	35,608	35,608		14,990	34,808
14,500	14,500	14,500		3,500	1,500
21,240	21,240	21,240		21,240	21,240
400	4,000	400	1,200	4,000	4,000
1,000	1,400	1,000		1,000	1,000
	2,000		23,850	15,000	15,000
2,000	7,000			7,000	7,000
58	62	67	DRAVO 26	52	61

**WRITE TODAY
FOR BULLETIN
HI-523-80**

Perfect for your purpose...

PACKARD fractional horsepower MOTORS

Packard motors are the answer to your fractional horsepower motor requirements. Their recognized dependability and efficiency, plus rugged design and outstanding uniform quality will increase the prestige and trade acceptance of your products.

Packard motors are mass-produced by specialists who have built fractional horsepower motors *exclusively* for the past 33 years. Today our enlarged plant facilities and all of our engineering and manufacturing experience continue to be concentrated in this single field.

Profit now from this singleness of purpose. Remember, for superior performance, for quick service and complete satisfaction, specify Packard motors . . . the perfect answer to your fractional horsepower needs.



Packard
MADE IN U.S.A.

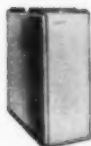
Packard Electric Division, General Motors Corporation,
Warren, Ohio

DEPENDABLE APPLIANCE MOTORS
FOR THIRTY-THREE YEARS



MONCRIEF

*The buy-word for all
that's new in modern heating
equipment*



Series L
Gas-Fired Steel
Air Condition-
ing Unit.



Series U
Gas-Fired,
Steel Utility
Air Condition-
ing Unit.



Series P
Gun, Oil-Fired
Air Conditioning
Unit. Steel
heating element.

for GRAVITY Installations
for FORCED AIR Installations
for PERIMETER Installations

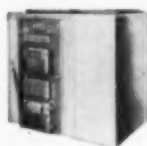
For ANY FUEL GAS • OIL • COAL — STEEL AND CAST IRON HEATING ELEMENTS



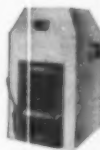
No. CL-200
Gas Fired Air
Conditioning Unit
with cast iron
Element.



Series W
Gas-Fired
Gravity Furnace
Available with
Steel or Cast Iron
Heating Element.



Series AC-F
Coal-Fired Air
Conditioning
Unit. Steel Heat-
ing Element.



Series C
Coal-Fired,
Cast Iron
Furnace.



No. VU-95-E
Gas Counter-
flow Unit, for
Floor Slab,
Perimeter
Heating.



No. VUC-75-E
Oil Counter-
flow Unit, for
Floor Slab,
Perimeter
Heating.

THE HENRY FURNACE COMPANY • Medina, Ohio

HEATING AND AIR CONDITIONING UNITS

MONCRIEF
SINCE 1891

FURNACE PIPE AND FITTINGS

There Is Still
No Shortage of
Grant Wilson
A.R.A.
Sheets

but...

Here are 2 good reasons
for buying them **NOW**

- ① Use them to conserve your present steel stocks and your future allocations.
- ② Keep them in stock as an "ace in the hole" against possible future steel shortages.

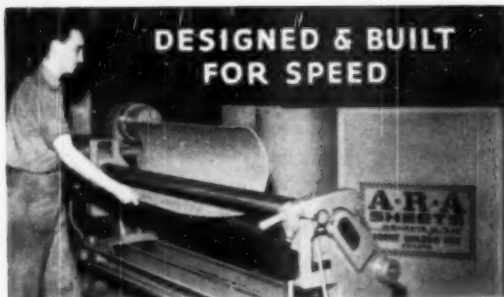
EASY TO WORK



A.R.A. SHEETS are smooth and clean; they're simply strong to withstand all the handling necessary to form, transport and install them. You can depend on every square foot of A.R.A. SHEETS as being uniform and of the highest possible quality. Asbestos clad A.R.A. SHEETS are tough yet flexible — rigid yet not brittle — fire-proofed and water proofed — will not dry out, crack, crumble or chip, last indefinitely. They have a high insulating value (K 45 BTU.) and good sound deadening properties, no metallic rattle. The large A.R.A. SHEET 35" x 48" contains 11 sq. ft. and weighs only about 5 pounds.

Accepted throughout the entire Industry as the *practical* alternate for sheet steel, Grant Wilson A.R.A. SHEETS are designed *especially* for Heating and Ventilating use. Easy to fabricate, A.R.A. SHEETS can be cut with snips to any pattern — edges are clean and precise. A.R.A. SHEETS can be quickly notched, die-cut or fabricated into intricate and complicated fittings in your own shop. Preformed or other metal corners and fastening seams can be used to make very strong and durable A.R.A. fittings. They are as easy to roll into round pipe as sheet steel.

**DESIGNED & BUILT
FOR SPEED**



WRITE TODAY FOR FREE ILLUSTRATED BOOKLET 89-A



Here is the package of A.R.A. SHEETS for shipping or carrying.

Each contains 20 sheets 35" x 48". Always clean and in good condition. Weight approximately 100 lbs.

Grant Wilson inc.
ASBESTOS and INSULATING MATERIALS

141 West Jackson Blvd., Chicago 4, Illinois

OVER
1400%
SAVINGS IN
MAN-HOURS!

UNBELIEVABLE

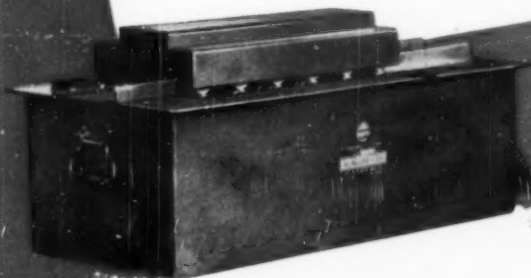
... BUT IT'S TRUE!

Let us prove it

If a machine cuts labor costs 10% it's considered a good buy —Flagler Lock Rolling Machines ARE cutting labor costs over 1400% according to bona fide reports. The big swing is to Flaglers—the lock roller you can't afford to be without. They represent the greatest advance in design since the first lock rolling machine was built.

If your shop lacks only a Drive Cleat and Double Seam machine you owe it to yourself to investigate the Flagler "22" or "24." All Flaglers may be equipped with any two sets of standard rolls—all rolls are quickly detachable. You need not buy Pittsburgh rolls if you now have a Pittsburgh lock rolling machine.

Model "22," at right, is rapidly forming Pittsburgh lock. Also makes Double Seam, Right Angles and Drive Cleats. (short as 4") over 1,000 an hour. Double spindles on all machines—all rolls powered—notched material passes easily. Model "24" below. Real cost-cutters for these times!



ROLLS ALL THESE LOCKS *Easily*



Pittsburgh



Drive Cleat



Double Seam



Right Angle

Designed by a pioneer in sheet metal working machinery. Already hundreds in use —many repeat orders. Ask for users names and sample of Pittsburgh lock.

**FLAGLER
COST
CUTTERS**

ROY G. FLAGLER MFG. CO.

19325 Filer Ave.

Detroit 34, Mich.

PHONE TWINEBROOK 1-1111

ROY G. FLAGLER MFG. CO., INC.
Detroit 34 Mich.

Send more information on

Model 22 ☐

Model 24 ☐

Have your dealer contact us ☐

Name _____

Title _____

Company _____

Address _____

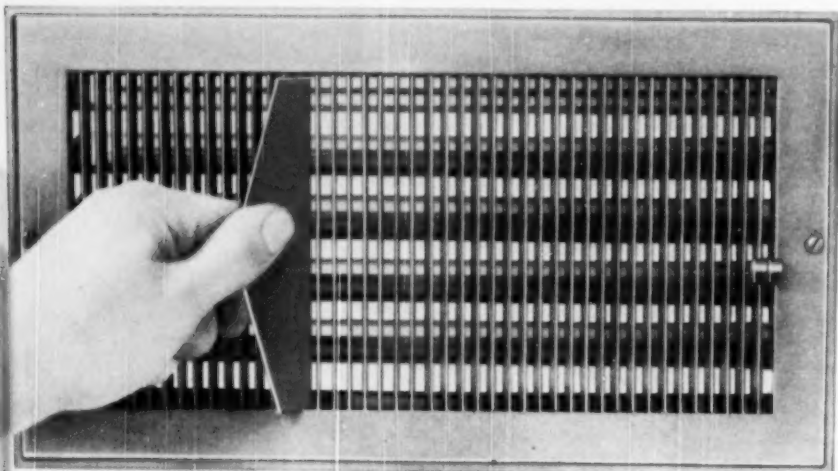
City _____

State _____



Class Leaders

IN A-C REGISTERS



NO.

256

Imitated by all—
equalled by none —
this is the most ver-
satile Air-Condition-
ing Register ever
made.

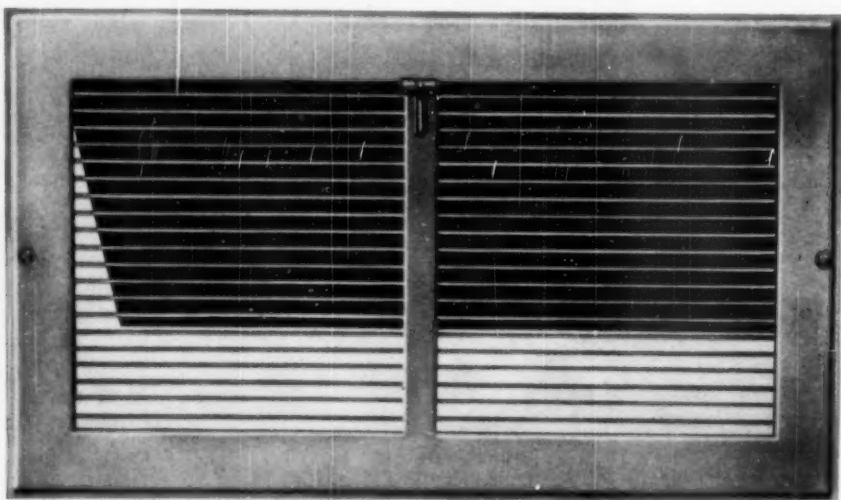
Can be installed in
any location — side-
wall or ceiling —
with **any style stack-
head** and air flow
from **any direction**.
Adjustable valves
and bendable grille-
bars let you direct
air up or down, right
or left.

NO.

153

The best constructed
single valve register
of all — not a mere
stamping but a strictly
first class mechan-
ically perfect regis-
ter.

Neat and Attractive
— Close-spaced hor-
izontal grille bars a
hide interior. With
U.S. No. 1258 shad-
ding frame shows
amazing savings in
installation costs. No.
102-B A.C. Frames
convert No. 153 and
No. 256 from side-
wall to A.C. base-
board registers —
saves duplication of
stocks.



Send for NEW CATALOG No. 51 for complete details and prices!

UNITED STATES REGISTER COMPANY

BATTLE CREEK, MICHIGAN

MINNEAPOLIS

KANSAS CITY

ALBANY

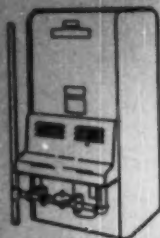
SOLD BY LEADING JOBBERS FROM COAST TO COAST

Every Unit You Need-Every Feature You Want

IN
HEIL
Automatic Heat



Gas-Fired Winter Air Conditioner



Gravity Gas Furnace

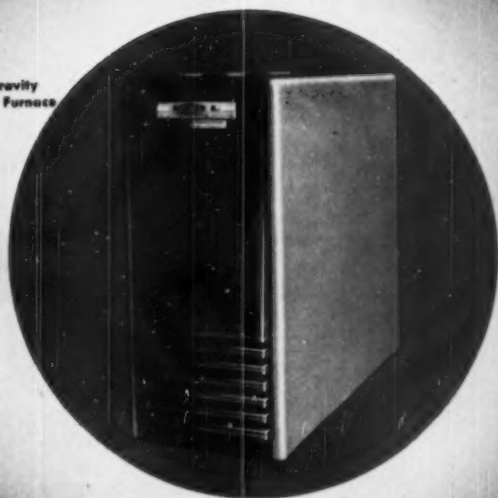
GAS-FIRED MODELS



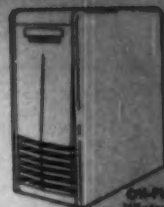
Conversion Gas Burner



Gas-Fired Highway



Oil-Fired Boiler



Oil-Fired Winter Air Conditioner

OIL-FIRED MODELS



Conversion Oil Burner



Oil-Fired Highway

You can sell HEIL Automatic Heat to every prospect. There's a unit for every requirement, a size for every job. Men will appreciate HEIL's more careful design and construction. Women will like HEIL's clean decorative styling. Thousands of records prove HEIL's efficiency and freedom from trouble, so you can sell HEIL with confidence. Every unit bears the highest applicable approval for safety and efficiency. It's a line that can't be beat—why not investigate?

THE HEIL CO.

MILWAUKEE 1, WISCONSIN

District Offices: Hillside, Washington, D. C., Atlanta, Milwaukee, Detroit, Chicago, Minneapolis, Kansas City, Dallas, Los Angeles, Seattle

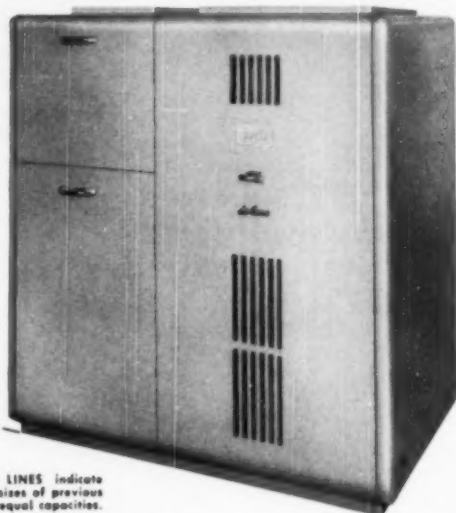
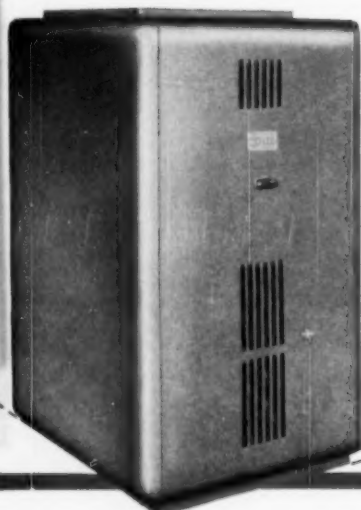
HILLSIDE, NEW JERSEY

**SMALLER-
BUT
GREATER!**

NEW *"Thrifty Fifty"*

GAS-FIRED **NIAGARA** FURNACES

NOW provide more heat
per cu. ft. of space occupied . . .
units are approximately 30%
smaller than previous Niagaras
of equal capacity



DOTTED LINES indicate
relative sizes of previous
units of equal capacities.

NEW SERIES 50 Winter Air Conditioner Input 100,000 BTU*

NOW		BEFORE
48 1/8"	HIGH	53"
47 1/8"	WIDE	58 1/4"
31 1/8"	DEEP	36 1/2"
10.2	CU. FT.	14.9

*Made in 5 capacities

NEW SERIES 50 Gravity Furnaces Input 95,000 BTU*

NOW		BEFORE
48 1/8"	HIGH	58"
28 1/8"	WIDE	38 1/2"
31 1/8"	DEEP	36 1/2"
6.2	CU. FT.	9.6

*Made in 4 capacities

... with Niagara's Famous Cast-Iron* Heat Exchanger

All Series 50 Niagara units, made in sizes for large, medium and small homes, have the famous Niagara cast iron heat exchanger, long noted for efficiency and durability. Forced air units include De Luxe models with

*Combustion chamber is copper-chromium-iron alloy.

3-speed direct drive blower and standard units with single speed belt drive blower. Write for complete catalog.

NIAGARA FURNACE DIVISION
THE FOREST CITY FOUNDRIES COMPANY
2500 West 27th St., Cleveland 13, Ohio

NIAGARA makes all 3: Gas • Oil • Coal Furnaces • Cast Iron or Steel

New Aerofuse

TYPE D

SQUARE DIFFUSER

360° AIR DISTRIBUTION or any required pattern at the vital point of air delivery



Designed to harmonize with modern architectural design . . . engineered for efficient performance . . . the new Type D Aerofuse is the answer to demands of both architect and engineer for a square diffuser that will deliver supply air in a 360° pattern. Assuring a complete flexibility to meet specific job requirements where circular distribution is not practical, baffles may be used to block off any portion of the diffuser and direct air stream in a variety of patterns, as illustrated below.

Two types are available . . . Type DF for flush mounting in standard acoustical tile ceilings . . . Type DE for installation on plaster ceilings. Both types are listed in five sizes (12"x12", 16"x16", 20"x20", 24"x24", 28"x28") with neck diameters from 6" to 18".



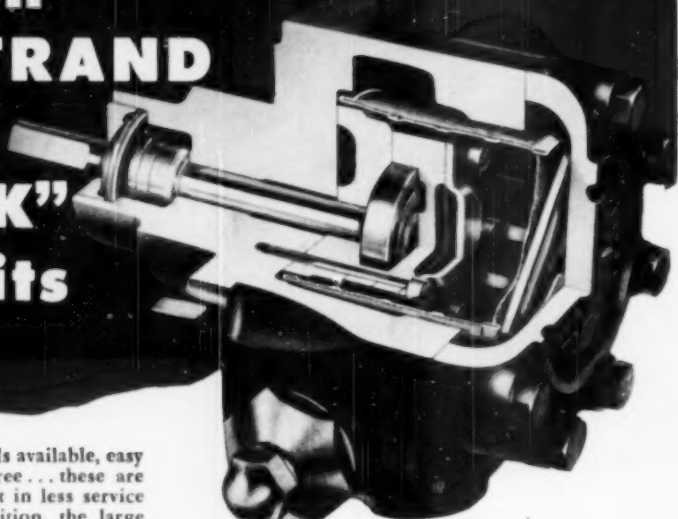
For complete details on the Type D Aerofuse, size selection information and engineering data . . . send for Catalog 103.



TUTTLE & BAILEY inc

NEW BRITAIN, CONNECTICUT

with SUNDSTRAND Models "J" and "K" Fuel Units



Precision made from the best materials available, easy to install, dependable and trouble-free... these are some of the basic features that result in less service on Sundstrand Fuel Units. In addition, the large capacity strainer is a single monel screen, easy to clean and the strainer cavity readily flushed. The piston type valve contains a resilient neoprene seat for positive closing and long life.

There are four basic models of Sundstrand Fuel Units.

Available in 5 Sizes Having Maximum Nozzle Capacities From 3 to 20 GPH

The new Sundstrand Model "J" and "K" Fuel Units are available in the following nozzle capacities: 3, 6, 9, 14 and 20 GPH. Either single stage, two stage or solenoid models can be furnished in the above capacities. Like all Sundstrand Fuel Units, they are precision made from the time-tested valve, pumping members, etc.

Features

- Quieter... provided with new anti-hum diaphragm and hydraulically equalized pumping members.

- Has 7/16" diameter shaft and long shaft bearing.
- Has time-tested Sundstrand valve and Rota-Roll Pumping members.
- Available with integral or bracket mounting.
- Thorough factory testing... Each and every Sundstrand Fuel Unit receives thorough tests for quietness and efficient operation before shipment.
- Underwriters' Laboratories Approved.

Free Data

on the complete line of Sundstrand Fuel Units are included in these 4 bulletins. Ask for bulletins A58. NOTE: Sundstrand Fuel Units are being manufactured in Canada by John Inalis, Ltd., 14 Strachan Ave., Toronto, Canada.



2561 ELEVENTH STREET • ROCKFORD, ILLINOIS

FUEL UNITS • HYDRAULIC PUMPS • TRANSMISSIONS • FLUID MOTORS • VALVES and CONTROLS

**YOUR MOST COMPLETE LINE OF
COMBUSTION CHAMBERS FOR DOMESTIC USE!**



- **Threats to validity** – internal validity – causal relationship
 • **Internal validity** – the extent to which the study design
 • **Internal validity** – the extent to which the study design
 • **Internal validity** – the extent to which the study design
 • **Internal validity** – the extent to which the study design
 • **Internal validity** – the extent to which the study design

PANELOX HEAT-RESISTANT STAINLESS
STEEL COMBUSTION CHAMBERS

HIGHER QUALITY STANDARDS



is WHY

Luxaire

is the TREND-SETTER in

MODERN HEATING EQUIPMENT

Available for all types
of fuel — GAS . . . OIL . . . COAL

Luxaire units are built with
Steel heating elements —
Cast Iron heating elements —
Luxaire has them both!

For Perimeter Heating
as well as conventional
installations.



Series A
Gas-Fired Steel
Air Condition-
ing Unit.



Series H
Gas-Fired,
Steel Utility
Air Condition-
ing Unit.



Series G
Gas-Fired
Gravity Furnace
Available with
Steel or Cast
Iron Heating
Element.



Series O
Gas, Oil-Fired
Air Conditioning
Unit. Steel
heating element.



No. VHC-75-E
Oil Counter-
flow Unit, for
Slab Floor,
Perimeter
Heating.



No. HC-95-E
Gas Counter-
flow Unit, for
Slab Floor,
Perimeter
Heating.



Series C
Coal-Fired,
Cast Iron
Furnace.

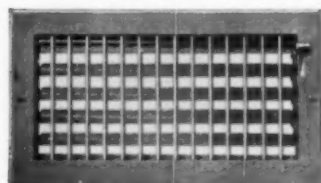


Series CA
Gas Fired Air
Conditioning Unit
with cast iron
Heating Element.

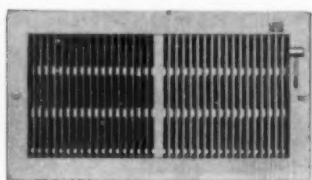
THE *Luxaire* C. A. OLSEN MANUFACTURING COMPANY • • ELYRIA, OHIO

HEATING & AIR CONDITIONING UNITS

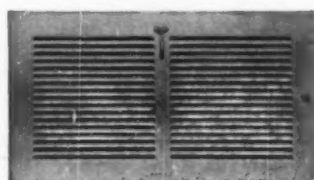
Why not deal with a large manufacturer who has a really complete line? For all your needs on registers and grilles, AUER has the right product at the right price. Our line covers everything from gravity jobs to high velocity outlets for air conditioning or cooling. Auer has maintained top quality for over 40 years. In our big, new, modern Cleveland plant, we are as well equipped to serve you as anybody in the industry.



No. 100SV-HML—Streamliner Register with single bank of vertical bars, multi-louvre shutters



No. 4432—Airo-Flex Multi-valve Register—4-Way Directional



No. 7032—Airo-Flex Single Valve Register—Adjustable Fins

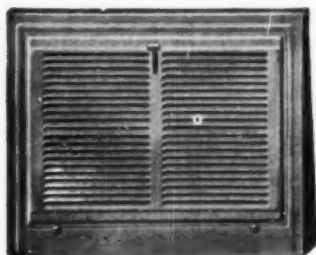


Fig. H-800—Heat-Rite Baseboard Register

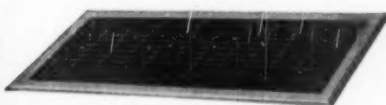


Fig. DSC-DuraBilt Grille. Also ideal for floor furnace use

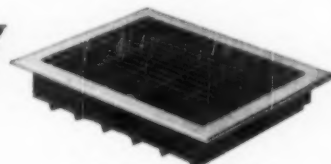


Fig. DR—DuraBilt Floor Register

Ask for complete Auer Register Book, or special Grille Catalog "G" on perforated grilles.

THE AUER REGISTER COMPANY
6600 CLEMENT AVE., CLEVELAND 5, OHIO
 CANADIAN DISTRIBUTOR, MARCHAND FURNACE LTD., TILBURY, ONT.

***Auer* REGISTERS**
 & GRILLES for AIR CONDITIONING & GRAVITY

HUGS the COMFORT LEVEL

to give you
a big sales advantage

Look at the temperature recording charts . . . see how PENN'S heat anticipating thermostat hugs the selected temperature level. That's comfort . . . real comfort that your prospects want! And you can give it to them with the PENN heat anticipating thermostat . . . the thermostat that gives you a big sales advantage.

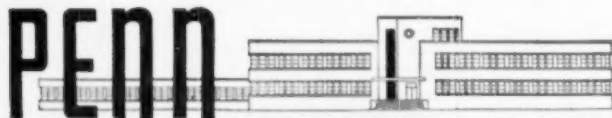
It is more sensitive to temperature changes than the human body. It balances accurately the heat in-put with the heat loss. It keeps room temperature within one-half degree of the selected level! Unusual? Not for the PENN thermostat. For more than 15 years . . . on heating systems of every type with every kind of fuel . . . this two-wire, snap-acting, heat anticipating thermostat has proved itself beyond doubt.

And, PENN costs no more than conventional thermostats! Investigate and compare. Ask your burner manufacturer, wholesaler or write to **Penn Electric Switch Co., Goshen, Indiana**, Export Division: 13 E. 40th Street, New York 16, N. Y., U.S.A. In Canada: Penn Controls, Ltd., Toronto, Ontario.

**Here's What Penn
Heat Anticipation
Does . . .**

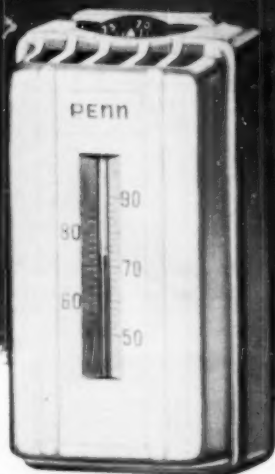
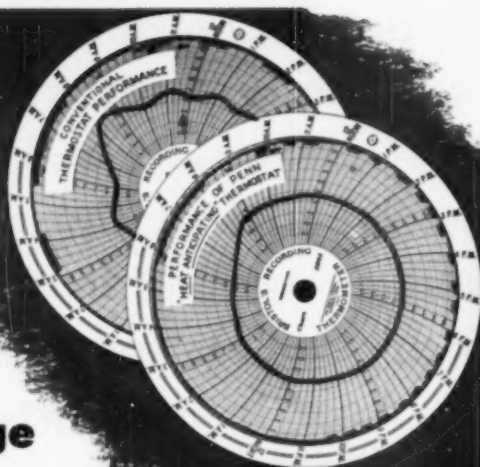
- * Holds the temperature within one-half degree of selected level.
- * Avoids "cold 70"; ends discomfort of "zig zag" heating.
- * Automatically compensates for outside weather conditions.
- * Provides more frequent, short burner operations instead of longer runs and standby periods, assuring even flow of warmth for greater comfort and fuel economy.

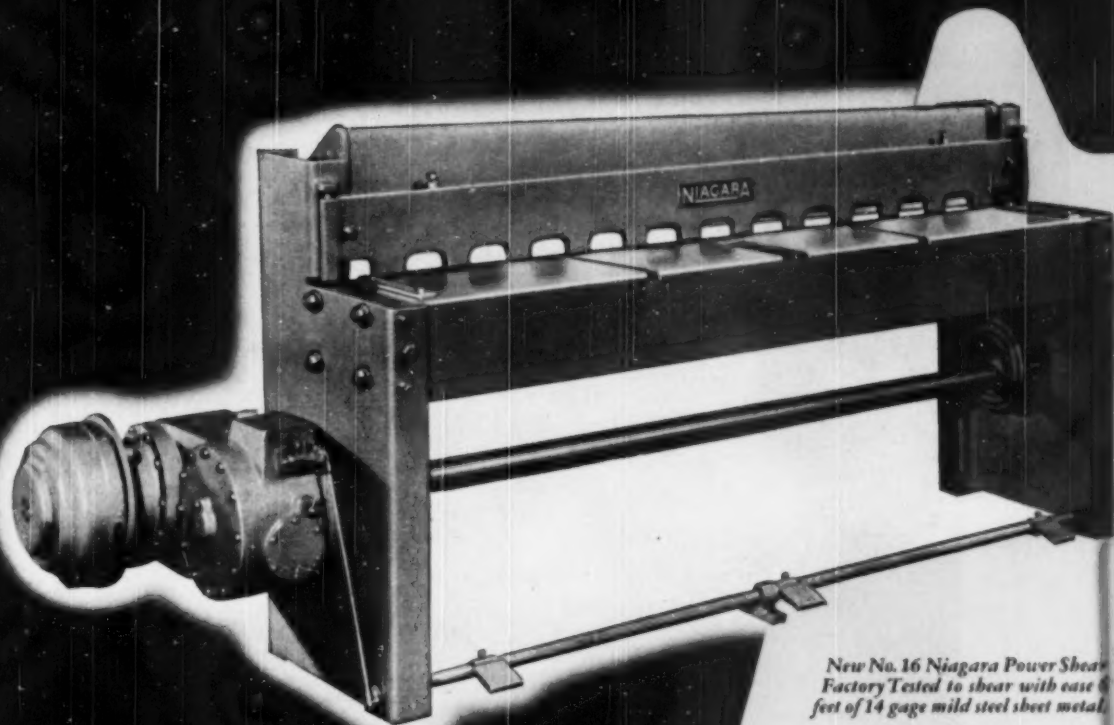
It "hugs" the selected level for closer temperature control



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, PUMPS, AIR COMPRESSORS, ENGINES, GAS RANGES





*New No. 16 Niagara Power Shear
Factory Tested to shear with ease 6
feet of 14 gage mild steel sheet metal.*

NIAGARA ANNOUNCES

- Greater production at 85 cuts per minute
- Constructed of unbreakable steel throughout
- Closed box section bed and cross-head for maximum rigidity
- A new leader in styling
- New hi-power totally enclosed drive
- Famous patented Niagara Sleeve Clutch
- All gears and clutch operate in bath of oil
- Four cutting edge knives
- Entire drive and main shaft operate on anti-friction bearings
- Cam actuated detent eliminates brake. Never needs adjustment
- Selective control for continuous or single stroke operation
- Parallel Back Gage, self measuring, ball bearing

Write for Bulletin 71-J

NIAGARA MACHINE & TOOL WORKS • BUFFALO 11, NEW YORK

Manufacturers of Presses, Shears, Machines and Tools for Plate and Sheet Metal Work

DISTRICT OFFICES: DETROIT • CLEVELAND • NEW YORK

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New Value for Users—New Profits for You

From the Industry's Ablest Builder of Quality Controls!

The easiest thing in the world to sell is a good job at a low cost, and that's exactly what you can count on doing when you sell **DETROIT** Certified Controls. Why? Because **DETROIT** Controls are designed and built to fill your customers' needs—to give real economy and reliability through years of trouble-free service. And **DETROIT's** new V-579 "Bi-flex" Gas Valve is no exception. Loaded with sales appeal, the new V-579 gives users, at low cost, an exclusive

combination of outstanding features which provide new standards for the efficient and quiet operation of modern gas burning equipment. So insist that your source of supply furnish **DETROIT** Certified Controls with all your heating equipment—it will mean new value for your customers and assure new profits for you.

Write for Bulletin No. 229



No. 411 Thermostat—A sensitive and accurate Timed Cycling thermostat for all types of heating systems. Provides close control of room temperature. Attractively styled, easily installed and adjusted. Write for Bulletin No. 193 and Form No. 1545.

DETROIT

LUBRICATOR COMPANY

3900 TRUMBULL AVE., DETROIT 8, MICHIGAN
Division of AMERICAN RADIATOR & Standard Sealers Corporation
Canadian Representatives: RAILWAY & ENGINEERING
SPECIALTIES, LTD.—Montreal, Toronto, Winnipeg



**DETROIT HEATING AND REFRIGERATION CONTROLS • ENGINE
SAFETY CONTROLS • FLOAT VALVES AND OIL BURNER EQUIP-
MENT • DETROIT EXPANSION VALVES AND REFRIGERATION
ACCESSORIES • STATIONARY AND LOCOMOTIVE LUBRICATORS**

Serving home and industry AMERICAN STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • FURNACE BURNERS • BOILER HEATER • TORAMANDA IRON



Now's the time to push profitable Fiberglas **DUST-STOP** Air Filters

... to get your share of the furnace filter replacement business ... to cash in on a timely, profitable item.

It's easy. Just set up the new "Change 'em Now" display and window streamers. Point of sale reminders for the homeowner that it's time to replace dirty furnace filters with new Fiberglas DUST-STOP* Air Filters. Post cards and folders are available, too ... tying your store directly to the strong DUST-STOP

national advertising now appearing in leading consumer publications.

If you haven't received your Fiberglas DUST-STOP Filter promotion kit by now, call your wholesaler today. Use this material. You'll find it pays to display and sell DUST-STOP—the *profitable* furnace filter that's backed by years of national advertising.

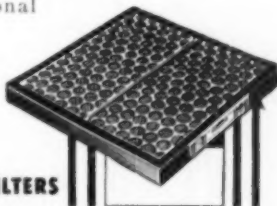


FIBERGLAS*

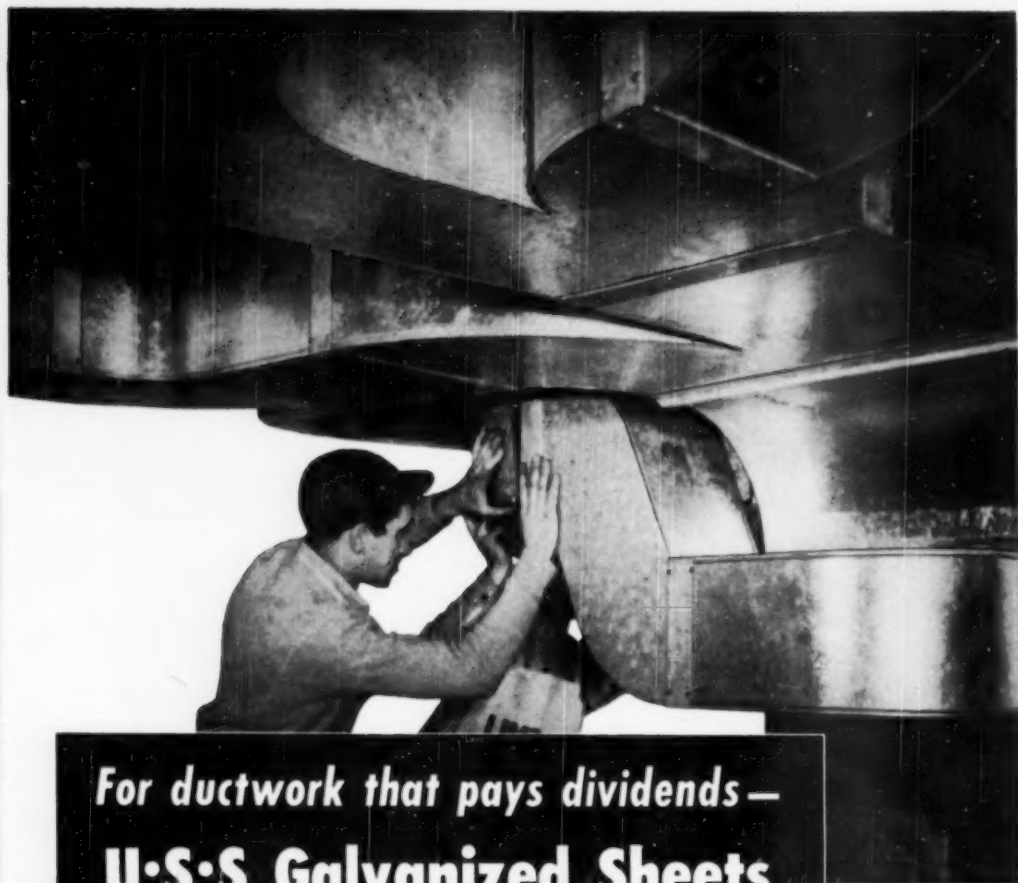
DUST-STOP*

REG. U.S. PAT. OFF.

AIR FILTERS



*DUST-STOP is the trade-mark of Owens-Corning Fiberglas Corporation for impingement-type air filters made of glass fibers. FIBERGLAS is the trade-mark (Reg. U. S. Pat. Off.) of Owens-Corning Fiberglas Corporation for a variety of products made of or with glass fibers.



For ductwork that pays dividends— **U·S·S Galvanized Sheets**

UNIFORM in softness, flatness and surface, U·S·S Galvanized Steel Sheets possess the *right* characteristics for good-looking, long-lasting ductwork.

Their tightly-adhering and uniform coating of zinc assures maximum durability. And when ducts are fabricated from material of this quality it is easy

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Most jobbers carry and recommend U·S·S Galvanized Steel Sheets. But to be sure that the work your shop turns out gets the extra protection these superior sheets afford, specify them by name when you place an order.

To stand up under severe atmospheric conditions

**U·S·S GALVANIZED
COPPER STEEL SHEETS**

— give twice the atmospheric corrosion resistance at little or no additional cost!

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UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST

UNITED STATES STEEL EXPORT COMPANY, NEW YORK



GALVANIZED STEEL SHEETS

UNITED STATES STEEL

Proof of SUPERIORITY

is
here



1 One Piece — All welded steel — Not cast iron and steel. Provides uniform expansion and contraction, longer life. No tie-rod, bolted, gasketed, or slip joints to leak, separate, or crack.

2 Uniform air flow and heat distribution — burner extends under entire heat exchanger. Even flow of air through tubes and around heat exchanger insures maximum heat transfer and fuel economy.

3 High Crown Sheet — No flame impingement, no "hot spots". Stainless steel baffle directs products of combustion over entire heat exchanger area. No joints or welds exposed to flame or path of flue gases.

9-510A



Mueller Climatrol

Direct Gas-fired Unit Heaters

(Propeller Fan or Blower Types)

THE unique new design features of Mueller Climatrol Direct Gas-fired Unit Heaters offer outstanding advantages to heating contractors. You have a unit to fit any application, with both the Type 150 (propeller fan) and Type 151 (blower, not shown) to choose from. Each is AGA approved for all gases, and is available in four input capacities: 60,000, 90,000, 120,000, and 150,000 Btu.

With the Types 150 and 151 you can deliver a more efficient, better-built heating unit — and assure longer life, *plus* greater operating economy. And, you can deliver jobs faster because these units are *shipped assembled and pre-wired*.

Get behind the Types 150 and 151. Increase your sales and profits with these outstandingly superior unit heaters, backed by the "Big Name in Heating," Mueller Climatrol. Write for information . . . L. J. Mueller Furnace Co., 2165 W. Oklahoma Ave., Milwaukee 15, Wis.

MUELLER

Climatrol

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FOR GAS



FOR OIL



FOR COAL



WHEN we made the great new AMER-glas filter, we also made plans for merchandising it . . . profitable plans for you.

That's why we are ready now to help you keep AMER-glas moving — a "best seller" for your big market.

**TO KEEP
THEM MOVING**

**TO MAKE YOU
MONEY**

AMER-glas

HAS EVERYTHING

—a new kind of extra-resilient body for long service, interlaced

pad of white glass filament has a thermo-plastic bond, viscosine coating that catches even tiny particles of dust, a strong frame to stay in shape and extra important—a clean-cut distribution policy to protect your market.

AMER-glas HITS A GIANT MARKET

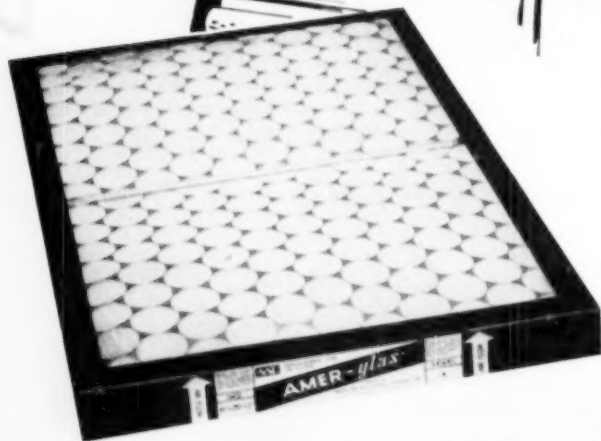
—for today, one home in every three has a forced warm-air furnace where a filter should be sold now. Add to this huge market all the industrial and commercial sales and you're digging into a pile of profit. Here is help for your sales campaign. Put these sales-makers to work for you. A complete promotion package is available through your AMER-glas distributor now. Place your order, be ready for steady profits with AAF's AMER-glas selling program.

AMER-glas

REPLACEABLE FILTERS

FROM THE GREATEST NAME IN AIR FILTERS!

*Today's
Best Buy
is
Better Air!*



WE TOLD MILLIONS IN....

...HOW HOMES, OFFICES, INDUSTRY—EVERYONE—ANYWHERE could depend on AAF for the big advancements in better air. We plan to continue making all America "Air Conscious" and hold the AAF position of first in the business of making air clean.



**WE'RE TELLING 'EM
IT'S TIME TO BUY!**

Here is the product, here's the promotion—here's the AAF plan for replaceable filter profits. For more details ask your Amer-glas distributor or write to address below.

AMER-glas

brings you a

PACKAGED

**"PROFIT-MAKER"
PLAN**

for selling in
1950 and 1951



**SPOT
ANNOUNCEMENTS**



**NEWSPAPER
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**SERVICE
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MAILERS



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American Air Filter

COMPANY, INC.

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AIRCELL PIPE COVERING**

SAL-MO ASBESTOS AIRCELL PAPER

SAL-MO ASBESTOS PAPER

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**SAL-MO ASBESTOS
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SALL MOUNTAIN COMPANY
Asbestos
UTILITY
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ASBESTOS PRODUCTS

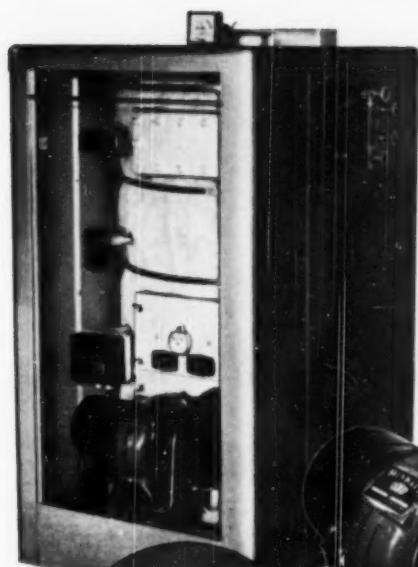
SINCE 1886 . . . when Sall Mountain Company was organized, this Company has enjoyed a leading position in the manufacture and distribution of Asbestos Products and in making the fullest use of Asbestos for domestic and industrial insulation.

Our improved machinery and equipment, which are of the very latest design are important, but most important of all is our experience of many years in successfully solving the problems involving the many uses of Asbestos.

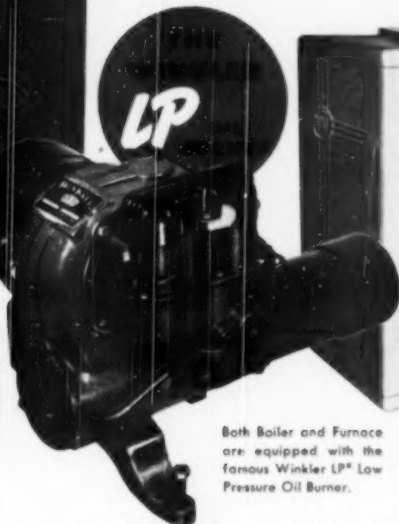
SALL MOUNTAIN COMPANY
ANDOVER 3-2414 • 176 W. ADAMS ST. • CHICAGO 3, ILLINOIS

RADIANT OR WARM AIR HEATING

... YOU CAN APPEAL TO EITHER TYPE OF
BUYER WITH THESE TWO
GREAT WINKLER COMBINATIONS



NEW!
WINKLER
ECON-O-FLOW
BOILER



Both Boiler and Furnace
are equipped with the
famous Winkler LP* Low
Pressure Oil Burner.



The boiler illustrated above is a new addition to the Winkler line of complete heating units. Fired with the famous Winkler LP* Oil Burner, it gives the buyer who prefers radiant heat all the advantages of Winkler quality and economy of operation.

And for those who prefer warm air heating, Winkler Furnaces likewise offer more *heat per dollar!* For both new building and for replacement, Winkler Furnaces and Boilers introduce a new high in heating efficiency.

Winkler Oil-Fired Boilers and Furnaces cut fuel costs—and you can easily prove it to the most skeptical customer! The Winkler LP* Low Pressure Oil Burner, with its

clog-proof nozzle can be sized to the exact heating load... no need to oversize nozzles with resulting heat waste. This Winkler non-clog feature virtually eliminates service.

The Winkler Econ-O-Flow principle of design further contributes to fuel conservation. By extending the travel of hot gases before releasing them to the chimney, more heat is extracted from every bit of fuel burned.

This great combination of Winkler LP* Burner and Boiler or Furnace really stretches fuel dollars! Get full information now on how to turn Winkler performance into profit. Write today!

The most complete line of fine heating equipment in America



Ask about the
Winkler Free Sales
Training School

WINKLER
Automatic Heating Equipment

U. S. MACHINE
CORPORATION
Dept. A100,
Lebanon, Indiana



Yes! YOU CAN HANG STAINLESS

- NOTHING NEW TO LEARN
- NO TRICKS
- NO NEW EQUIPMENT NEEDED

If you've hesitated in the past about taking those high-profit stainless steel roof drainage jobs, forget your fears. Berger Drainage Products made of Republic ENDURO Stainless Steel are *easy to hang*. No special skill is needed, other than your own knowledge and experience.

Your usual tools and equipment are fine. Berger ENDURO Drainage Products work as easily as those made of familiar 26-gauge galvanized steel . . . easier, in some cases, because Berger is making "Snap-Tite" of ENDURO. That's the patented eaves trough you just slip, snap and seal.

There's no trick to soldering ENDURO, either. Your iron should be a large one, heated slightly more than usual. Remember to clean off all flux *immediately after soldering*. Use a 5% to 10% solution of washing soda with water.

Be sure to use all-ENDURO fittings and accessories. Then you'll have hung a drainage system that's stronger and more attractive than ordinary systems . . . that resists rust and corrosion . . . that won't bleed or discolor paint . . . that resists abrasion and denting . . . that requires little or no maintenance . . . that pays you well.

You'll find jobber stocks of ready-to-use Berger ENDURO Stainless Steel Roof Drainage Products in most areas . . . as well as Berger Drainage Products of Toncan Iron, galvanized steel and copper.



include Snap-Tite Eaves Trough; "K" Gutter; Plain Round, Corrugated Round and Corrugated Square Conductor Pipe; Ridge Roll; Flashing; Roll Valley; plus a complete line of all necessary fittings. All are made of 28-gauge Republic ENDURO Stainless Steel, Type 301, No. 2 satin finish.



Berger

Manufacturing Division

REPUBLIC STEEL CORPORATION • CANTON 5, OHIO

Warehouses in BOSTON, DETROIT, INDIANAPOLIS, PHILADELPHIA and ST. LOUIS



AMERICAN-Standard

First in heating . . . first in plumbing

MOHAWK

gas fired
winter air conditioner



***precision engineered for completely automatic,
dependable operation in virtually every size of home.***

■ With this outstanding unit from the Sunbeam line by American-Standard on your sales floor you are equipped to offer gas fired winter air conditioning to practically every prospect on your list.

The Mohawk Winter Air Conditioner is made of cast iron for extra durability, longer life and quieter operation, and is available in nine sizes with capacities ranging from 60,000 to 300,000 Btu input per hour. It features pre-heating of return air to save fuel and increase efficiency—has a cast iron heating element made in two sections with asbestos-packed leakproof joints. Its corrugated radiation shield cuts external heat loss. And the

high temperature alloy ribbon burner burns manufactured, natural, mixed, liquefied petroleum and butane-air gas uniformly and sparingly.

The compact, streamlined metal jacket of the Mohawk has a smooth, non dust-catching finish. It is supplied in the new American-Standard Forge Red which makes it an attention-getter on your sales floor. For detailed information on the Mohawk Winter Air Conditioner, ask your Wholesale Distributor for American-Standard Literature Form No. 802. **American Radiator & Standard Sanitary Corporation, P. O. Box 1226, Pittsburgh 30, Pennsylvania.**



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Serving home and industry

AMERICAN STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON



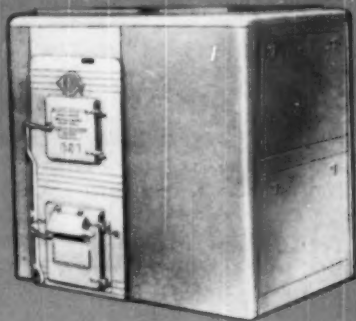
The Name of Distinction
IN
**WARM AIR
HEATING**



GAS FIRED



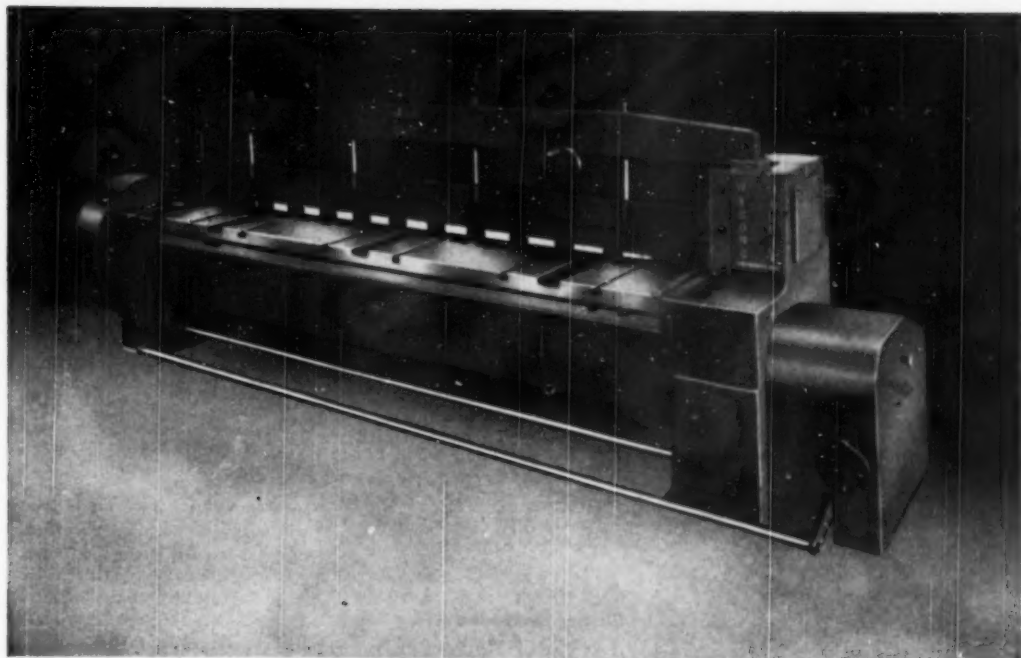
OIL FIRED



COAL FIRED

**A complete line, competitively
priced, for GAS, OIL and COAL**

MAYFLOWER AIR-CONDITIONERS, INC. • St. Paul 6, Minn.



Capacity 10 Foot, 10 Gauge, Mild Steel

9 reasons why everyone in the plant likes THE WYSONG & MILES No. 10-10 SHEAR

Sound engineering has produced an accurate, high production shear for less money. The No. 10-10 takes the toughest shearing jobs in stride and is shipped completely equipped, ready for continuous capacity operation. Rugged construction and precision features insure accurate cutting plus economical operation. The following features are standard.

1. Massive construction . . . Semi-steel castings with a high steel content are made in the modern Wysong and Miles Foundry to carry greater stress than required for continuous capacity loads. By being underdriven, weight is low and the shear has rigid stability.

2. For accurate shearing . . . The bed is squared with the end frames in all directions. Holddown and knife-bar travel is true because ways are hand-scraped for perfect bearing and are squared with the bed. Solid, standard alloy steel blades with 4 cutting edges, backed by massive knife-bar, cut straight, cleanly and accurately.

3. Front-operated back gauge . . . It accurately adjusts to .0078 (1/128th) of an inch by turning the handwheel conveniently located on the front of

the shear. This gauge saves many steps and increases production.

4. Positive compensating holddown . . . Individual spring actuated plungers in each foot firmly clamp sheets of varying thicknesses and small strips without adjustment.

5. 9-Jaw Clutch . . . Built of hardened, forged alloy steel for long life, the jaws mesh smoothly, engage instantaneously, and the load is distributed equally over all 9 jaws. A twist of the wrist sets the clutch for single stroke or continuous shearing. Wherever this Wysong and Miles designed clutch is in use, it continues to give trouble-free service.

6. Self-lubricating eccentrics . . . For thorough lubrication and cool operation, on each revolution, eccentrics are bathed in a reservoir of oil contained within each end frame.

7. Cam-operated brake . . . Since brake engages only to hold the knife-bar in the top position, there is no drag on the balance of the stroke. Powerful counterbalancing springs aid in returning the knife-bar smoothly to the top position.

8. Testing and guarantee . . . Before leaving the factory, each shear is thoroughly tested with an automatic trip for 24 hours of operation. Each shear is shipped in perfect operating condition and each shear is backed by a year's guarantee.

9. Economical . . . You'll be pleasantly surprised at the low cost of the No. 10-10 shear. 100% jig and fixture construction, plus simplicity of design means easy maintenance, making the No. 10-10 economical in operation . . . truly a great shear value.

Write for Catalog No. 22 giving full information and specifications on the Wysong and Miles line of Sheet Metal Machinery . . . Squaring Shears, Power, Air and Foot operated; Slip Roll Formers and Rotary Combination Sheet Metal Machine.

WYSONG and MILES CO.

633 FULTON STREET
GREENSBORO, N. C.



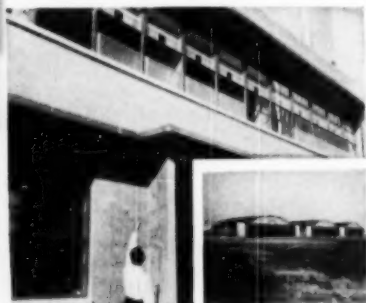
Take it from Fred Munder...

"For the U. N. Building—and for the world's largest hangars, too—MONEL required no extra time or labor costs."

MR. FRED MUNDER, President of A. Munder & Son, Inc., Long Island City, N. Y. His firm recently completed Monel installations at the United Nations Secretariat Building, New York City, and International Airport, Idlewild, Queens.



MONEL FLASHINGS seal masonry at top and bottom of lattice work on roof of United Nations Secretariat Building. Strong, corrosion-resisting Monel was also used for flashings, expansion joints and louvers on this building.



FOUR OF THE LARGEST AIRPLANES now flying could fit into any one of the 3 new hangars at International Airport. They're the world's largest, and required 30,000 pounds of Monel for fascia, flashings and expansion joints.

Like most shops in a highly competitive area, A. Munder & Son, Inc., of Long Island City, N. Y., must figure closely—and accurately. If their bid is too high, there's no job. And if it's too low, there's no profit.

That's why President Fred Munder considers the properties of Monel® Roofing Sheet so important. Easily cut and bent, readily soldered into a good, strong weatherproof job, Monel Roofing Sheet presents no fabrication or installation problems to the experienced roofer.

Knowing these things, Fred Munder recently submitted bids for the two Monel installations pictured here. And A. Munder & Son, Inc., got both jobs!

It was in talking about them that Mr. Munder said, "Our men work with Monel just as they do with other roofing metals. For the U. N. Building—and for the world's largest hangars, too—Monel required no extra time or labor costs."

Certainly not! Monel sheet is as good a metal as can be had for general roofing and sheet metal work. Roofers cut, bend, form, lay, seam

and solder Monel by the same methods and with the same tools they've always used.

You can see, then, why it doesn't increase your costs to install Monel. What's more, Monel gives your customers "life-of-the-building" protection because it is strong... tough... hard. Because it resists atmospheric corrosion. Because it stands up under impact, abrasion and repeated flexing.

Here's something else. With a metal like Monel, you can often help your customers save money by suggesting the use of lighter gauge sheet. You'll find this subject covered in one of our free bulletins, "Monel Roofing Sheet—Basic Application Data." Another that'll come in handy for giving your men occasional corner-cutting hints about Monel installations is "The Soft Soldering of Monel Sheet."

Both of these helpful bulletins are yours—free. For quick action, use the coupon below.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

MONEL...FOR THE LIFE OF THE BUILDING

Architectural Section
The International Nickel Company, Inc.
67 Wall Street, New York 5, N. Y.

Please send me those two helpful bulletins you have for roofing contractors.

Name.....

Address.....

City..... Zone..... State.....

AA-10-50

Get Your Free Booklets Now!



News Round-Up



August Housing Starts

HOMEBUILDERS STARTED 141,000 new permanent non-farm dwelling units during August, bringing the total for the first 8 months of 1950 to 988,400, according to preliminary estimates of the Labor Department's Bureau of Labor Statistics. The first 8 months' total for 1950 was 54 per cent above last year's figure for the corresponding months. Although the August volume of new housing started was slightly under that for July, it was 42 per cent above the August 1949 figure.

Late reports boosted the May estimate to 149,100, establishing that month as the peak for 1950. Moderate upward revisions in the final totals for June and July are indicated from additional information being received.

Publicly owned new housing starts totaled 17,400 units by the end of August, compared with 28,200 for the first 8 months of 1949.

July Steel Production

PRODUCTION OF STEEL during the month of July totaled 8,071,294 tons, or 94.7 per cent of capacity. This brought production for the year to 55,178,022 tons, or 95.4 per cent of capacity. Annual steel capacity of the industry as of July 1, 1950, stands at 100,563,500 tons.

Shipments of finished steel products during the first seven months of the year set a new record. A total of 40,232,505 net tons was more than 2 million tons greater than in the same period in 1949.

Shipments of cold rolled sheets made a monthly record in July at more than 203,000 tons.

July Aluminum Production

DOMESTIC ALUMINUM production in July soared to 127,035,442 lb from 120,800,774 the month before, Donald M. White, secretary of the Aluminum Association, has reported.

At the current figure, the industry is producing primary metal at the rate of approximately 1,450,000,000 lb a year, more than 17 per cent greater than total production in 1949, according to White.

He explained the increase by expansion of general industrial demand and the stepping up of military orders.

Credit Restrictions

UNDER THE AUTHORITY of the Defense Production Act of 1950, the Federal Reserve Board reinstituted regulation of consumer instalment credit through Regulation W effective at the opening of business September 18, 1950.

The regulation covers automobile instalment credits of \$5,000 and less and other instalment credits of \$2,500 and less. Except that home improvement credits are now covered and terms are generally tightened, the Regulation is in much the same form as the regulation which expired June 30, 1949.

The limitations initially established are:

Down payments of at least one-third, and maximum maturities of 21 months for automobiles.

Down payments of at least 15 per cent, and maximum maturities of 18 months for appliances: refrigerators, food freezers, radio or television sets, phonographs, cooking stoves, ranges, dishwashers, ironers, washing machines, clothes driers, sewing machines, suction cleaners, air conditioners and dehumidifiers.

Down payments of at least 10 per cent, and 18 months maximum maturity for furniture and rugs.

Down payments of at least 10 per cent, and 30 months maximum maturity for home repairs, alterations or improvements.

Following the past policy of placing fewer restrictions on small credits, the new regulation does not contain down payment requirements for articles costing less than \$100 although, unlike the former Regulation, maturities are limited.

Instalment loans for the purchase of any listed article carry the same limitations that apply to the instalment sale of the article; other instalment loans are limited to a maximum maturity of 18 months.

Wholesalers Requirements

IN ORDER TO HAVE pertinent information on galvanized sheet and black pipe requirements available for immediate use in pointing out to proper authorities the essential position of the wholesaling heating industry in the economy, the National Heating Wholesalers Association, Inc. has sent out a questionnaire to wholesalers asking for their tonnage receipts of steel to be resold for heating purposes in the years 1948, 1949 and 1950 to date, also estimated requirements for last six months of 1950.



News Round-Up

Export Controls

THE GOVERNMENT HAS ACTED to prevent foreign buying from cutting into American supplies of iron and steel products important to defense.

The commerce department announced that, export controls have been reimposed on 39 classes of iron and steel mill products which had been declared control free last March.

The controls prevent shipment of these products, except by license from the department, to any foreign destination other than Canada, which is exempted from all export restrictions.

"With this recontrol action," the department said, "all important iron and steel commodities will be included on the positive (license requiring) list."

Hazardous Occupations Order

SECRETARY OF LABOR Maurice J. Tobin has announced the issuance of a new hazardous occupations order establishing a minimum age of 18 for employment of minors in the operation of power driven metal forming, punching, and shearing machines. The order takes effect on Oct. 30.

An exception is granted to qualified and registered apprentices under 18 who are required to operate the machines in the work of their apprenticeship. The close and direct supervision of a journeyman is necessary when the apprentice is operating the machine.

FPC Authorizations

THE FEDERAL POWER COMMISSION has granted temporary authorization to New York State National Gas corporation, of New York City, and the East Ohio Gas company, of Cleveland, Ohio, for the construction of connecting pipelines in Pennsylvania and Ohio which would make additional natural gas available to East Ohio during the winter months.

New York State Natural will build a 62 mile, 20 in. line in Pennsylvania, and East Ohio will construct a 1 mile, 20 in. line in Ohio. Estimated cost of the construction is \$3,792,806 for New York State Natural and \$40,910 for East Ohio. The two companies are affiliates in the Consolidated Natural Gas company system.

New York State Natural estimates that it will have available for sale to East Ohio during the next three years approximately 40 million cu ft of gas per day during the winter months of January, February and March.

Finding that an emergency situation exists, the FPC has granted temporary authorization to Mississippi River Fuel corporation, of St. Louis, Mo. to construct four new compressor stations and to operate three others already built in order to increase the sales capacity of its natural gas transmission system. The temporary authorization will expire not later than February 2, 1952.

Mississippi, which owns and operates a transmission system extending from northern Louisiana through Arkansas and Missouri into Illinois, makes its principal sales in Illinois and Missouri in the vicinity of St. Louis, Missouri and East St. Louis and Alton, Illinois.

Temporary authorization has been granted for four subsidiary companies of the Columbia Gas System, Inc., to make additions to their natural gas transmission systems in Ohio, West Virginia, Pennsylvania and New York. Estimated cost of all the facilities authorized is \$1,115,070.

The four companies are the Manufacturers Light and Heat company, Cumberland and Allegheny Gas company, Natural Gas company of West Virginia and Home Gas company, all with main offices in Pittsburgh, Penn.

Only one of the four projects, Home Gas company's involves the sale of gas to a new territory. The other three companies will use the facilities to provide continuous service to existing customers and to provide for normal growth within the territories presently served by them.

An initial decision has been filed by FPC presiding examiner Marvin Farrington authorizing Kansas-Nebraska Natural Gas company, of Phillipsburg, Kans. to expand the capacity of its pipeline system in Kansas and Nebraska to approximately 146 million cu ft of natural gas per day.

Priority Order Issued

EFFECTIVE AS OF OCT. 2, 1950 the first priority control over industry was put into effect. Gen. Wm. H. Harrison announced the initiation of a system under which orders carrying the classification "defense order" are given first priority over all civilian production.

These DO orders carry the authority to procure all materials needed to produce the classified items. The manufacturer who receives classified orders is required to sideline other orders in production to complete the defense material.

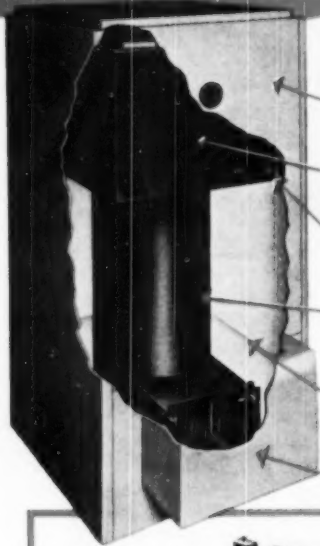
PROFIT FROM TODAY'S BIG "PULL OF GRAVITY" GAS GRAVITY HEATING by RICHMOND

two new units for economy-minded customers

What goes up in the way of low-cost housing, must come down to Richmond for the finest in efficient gravity heating. No law... just plain fact—when you consider what the new Richmond gravity gas-fired units have to offer. (See below.)

They're simple to install... economical to operate... yet never deviate from Richmond's high standards of design, workmanship and performance.

Today, with gravity the trend in low-cost heating, these Richmond quality units are a natural for your economy-minded customers. And you can be sure of meeting most gravity heating requirements with Richmond's two convenient sizes—70,000 and 90,000 BTU input per hour... plus the A.G.A. stamp of approval for all types of manufactured, natural and LP gases.



CONSIDER THESE QUALITY FEATURES of the Model SG-Gravity Warm-Air Unit

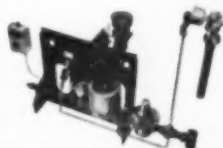
- 1 Sturdy round-cornered light green steel hammertone jacket.
- 2 Gas-tight all-welded radiator provides a large heating surface.
- 3 Cleanout covers provide easy access to flues for cleaning.
- 4 Heavy-gauge steel heat exchanger with large combustion chamber and long, easy-to-clean updraft flues.
- 5 Steel Casing Jacket Liner provides maximum air circulation to keep jacket cool.

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Natural and
Mixed Gases



Group B Controls
Manufactured or
Natural and
Mixed Gases



RICHMOND

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AA-7

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Company _____
Address _____



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plant in a wide variety of types, gauges and finishes. And Ryerson—the nation's pioneer stainless distributor—has a quarter-century of experience to help you specify and buy this money-making material for any product or part that must give long years of use.

Go after profitable stainless business—chimney liners, back bars, hospital and restaurant equipment, etc., etc. And call Ryerson for any requirement.

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Your nearby Ryerson plant is a dependable source for every type of sheet metal shop equipment. All are guaranteed to give satisfaction. Let us help with your metal working problems. Prompt, personal service assured.



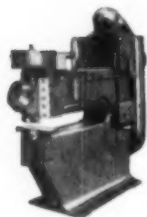
B-1 Beverly shear, 14 ga. capacity.



Standard bending brake—also Universal.



16 ga. Pittsburgh Lockformer.



Rotary shear for irregular and circle cutting, also flanging.



Combination shear, punch and reaper. And every other type of metal working equipment.

AMERICAN ARTISAN

Defense Production - 1950

ON SEPT. 10 PRESIDENT TRUMAN signed the Defense Production Act of 1950 into law. The country is again on the verge of controls over its economy. The following is a summary of the regulatory controls contained in the act.

Business can be ordered to accept and perform government orders and give priority in production and delivery schedules. Any and all materials can be controlled, with defense needs given first preference. Curtailments can be imposed on civilian production and non-essential production can be cut off completely. The President is authorized to institute the rationing of consumer goods.

Allocation of any material even if it is not in short supply can be ordered to encourage use of substitute materials in place of critical scarce materials. Inventory hoarding has been banned by an order directing that inventories be kept in balance with needs in the "recent past."

The President has been given broad powers for requisitioning any military or civilian materials which may be needed for defense. If the owner of material or property requisitioned does not accept the value placed upon it he shall be paid 75 per cent of the valuation established by the President and shall be entitled to seek recourse in the Court of Claims for the balance, within 3 years after the award.

If it is necessary to expand the production of essential materials, the President is authorized to make loans for expansion of facilities, development of new processes, or procurement of raw materials. The sum of \$600 million has been appropriated for these purposes and another appropriation of \$1.4 billion has been authorized. This assistance can take the form of guarantee of bank loans, direct loans to producers or actual construction or additions to facilities.

The act contains numerous provisions to curtail prices and wages. Power is granted to impose ceilings on prices but there is also the provision that ceilings on wages and salaries must be imposed simultaneously. It is not permitted to stabilize prices, wages or salaries at a lower level than existed in the period from May 24, 1950 to June 24, 1950.

The powers conveyed by the act cannot be used to compel any changes in business practices, cost practices or distribution methods in any industry.

Title 5 of the act covers the settlement of labor disputes. It states that the national defense requires uninterrupted production and that negotiation, collective bargaining and conciliation shall be used to the fullest extent to settle any disputes that arise. No action may be taken contrary to the Fair Labor Standards Act of 1938, other Federal labor standards statutes, or the Labor Management Relations Act of 1947.

Control of consumer and real estate credit is authorized by Title 6 of the act. Regulation of installment credit has already been placed into effect by the Federal Reserve Board. The President is permitted to regulate down payments and amortization periods on housing financed by government-insured mortgages. Real estate construction credit was placed under control as of August 3, 1950.

A series of general provisions dealing with administration of the act are contained in Title 7. Advisory committees from business and industry are recommended to consult with government on any control programs. Small business is to be given every consideration in the establishment of any controls. Exemptions from anti-trust laws can be granted by the government as deemed fit.

A committee is to be set up consisting of 5 members of the House banking committee and 5 members of the Senate banking committee to study the operation of the act and recommend any changes which may be deemed essential. Any department or official administering any programs under the act shall consult with the committee at the request of the committee.

Price and wage control authority is scheduled to expire on June 30, 1951. Other controls are authorized until June 30, 1952. The Congress can by concurrent resolution terminate any or all sections of the act before the expiration dates or can extend the expiration dates, if required.

W. Stuart Symington was designated by the President as coordinator of the overall mobilization effort. On authority granted by the President, Secretary of Commerce Sawyer was directed to set up the National Production Authority to administer the act. Secretary Sawyer then appointed William H. Harrison, president, International Telephone and Telegraph Corp., as head of the NPA.

Publicity Can Be A Sales Help

DAVID MARKSTEIN



PUBLICITY can be a big selling help, if you know how to get it.

Actually, the securing of free publicity is not a difficult business. Nor is there any magic to it. But you cannot expect editors to run anything you choose to hand them simply because you are an advertiser. Contrary to a popular idea, that's actually a bad approach. Able editors feel a responsibility toward their readers. They soon develop a hearty dislike for the advertiser who tries to pressure them into giving what amounts to free advertising in the news columns.

But if you come to him with something which has genuine news or human interest value, he will give you as much space as he can arrange.

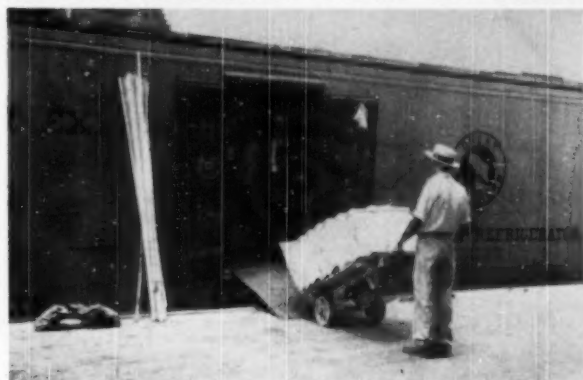
The corner newsstand can be an important part of your publicity plans. Keep the local editor informed of any news that may develop about your business.

Taking part in civic planning and civic drives keeps your name in the news. It gives you publicity as a leading citizen.





An interesting new installation may be good for space in the local paper. The customer will probably be happy to cooperate with you.



If you receive or send out an unusually large shipment, it's news. Carload shots often get in the papers.



If there is a parade in your town enter a float and make sure that everyone knows what business the float represents.

Home Demonstration Sells Furnaces



BETH WALKER

Bountiful, Utah

Entry into a new field called for new merchandising techniques. Here is the furnace selling plan developed by a Salt Lake City veteran.

Shown starting out on a selling job, Mr. Royce has pulled this unit thousands of miles over mountain roads.

MOHAMMED had the right idea when he decided to go to the mountain, since it wouldn't come to him, or so Oscar Royce, Salt Lake City, Utah, believes. Mr. Royce takes his furnace to the home of a prospective customer and demonstrates its heating ability right in the driveway!

He had the usual G.I. difficulty in placing himself satisfactorily in a position when he returned from 35 months' service on the *U.S.S. Washington* in the wartime navy. He'd helped his sister Hattie, who was managing a sporting goods store, organize the heating division of the business, hiring and supervising a crew of men. This was his first experience with heating equipment, and it was highly successful.

But Mr. Royce wasn't ready to settle down yet, hadn't found himself. He opened the appliance department of a store, the Southern Supply Co. in Richfield, Utah. But the Royces weren't content there, so when his sister called on him again, he quit and returned to Salt Lake City, taking a traveling job. This was the turning point for him.

It was on one of these trips that he met a big personable salesman whom he had known in his store days.

"Why don't you go in the heating business?" the salesman asked.

It wasn't the time for this venture, if one was conservative. The natural gas war was raging, and the Public Service Commission had put this fuel under restrictions.

Not only was new space heating prohibited by the commission, but conversion to gas was also banned. The situation in the heating equipment business was acute. And it was into such a situation that Oscar Royce launched his heating business.

He didn't have a furnace to demonstrate his new idea and he didn't have a trailer, but he borrowed both from the heating division of the Walter B. Lloyd Co.

There was a slump in the heating equipment business at the time and this company was affected with the rest, so when Mr. Royce said, "I'll tackle it," they decided to let him try.

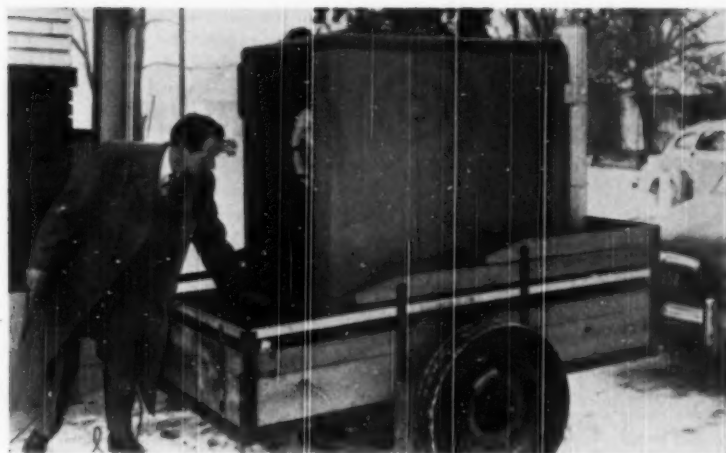
It wasn't any use to go to the people of the city, those close in. They could get to showrooms easily. So he drove to the outlying district where there were no gas lines, and solicited from door to door.

Three-way Task

This may sound easy, but Oscar Royce had taken on a three-way selling job. His first task was to sell the prospects on oil. Gas and coal were accepted, but oil was a comparatively new fuel in the region. He had to overcome both lack of popularity and skepticism before he could tackle selling problem number two.

This second selling point was to convince the people that the long range price was more reasonable for an oil fired furnace than for either gas or coal furnaces.

His third and last selling point was actual demonstra-



The furnace ready for demonstration. Power is obtained from the nearest home electrical outlet.

Here is the firing device that is used on the demonstration furnace.

tion, and this took place in their own driveway.

The furnace he was selling has a draft arrangement which permits the furnace to operate without a stack, and oil leaves no residue. Mr. Royce merely plugged a long extension cord into a convenient outlet and the demonstration began.

In new houses, where no furnaces were yet installed, or where conversion was being made or new heating plants set up in older homes, he arranged a system of canvas ducts, ran them into the windows, and kept the house comfortably warm during the installation period.

Five In A Week

With gas restrictions in effect, all heating equipment companies made a rush into the country for business, but this demonstration took the field. In one week he had sold five complete furnace installations. So unusual was this achievement that a local paper, *The Deseret News*, featured his accomplishment, and the furnace manufacturer featured him as the most outstanding and aggressive young veteran in the country handling its product. In fact, the vice president of the company, in a letter to V. A. Smith, vice president of the Walter B. Lloyd Co., local distributor, wrote "I can only say that the Oscar Royce method of operation should be preserved in textbook form for the general education of those interested in marketing."

Mr. Royce used the borrowed equipment only for one week; then he bought his own. He realized that he needed his own trailer because it was a tool of his trade.

"The competition was keen," says Mr. Royce. "There were bidders from every company for every new heating unit to be installed. But the demonstration paid off. In the first 35 I bid on I sold 30, even when my bid was considerably higher than the others."

Ordinarily the selling season in this locality is from June to November, but Mr. Royce installs furnaces in the



dead of winter. He keeps the house warm during the installation.

An old truism says that back of every successful man there is a woman, but in Oscar Royce's case, there were two women. His wife, Leila, had stood by him loyally during the adjustment period and now turned their home into an office, taking calls and doing the necessary book-keeping for his new venture. As he says,

"It was a big job, but my wife never complained. When I saw the direction I was headed, though, I knew I'd have to have a central office to work from. After all, three small children and a home are a full occupation for any woman, without her husband's work added on!"

So this time Mr. Royce called on his sister. Miss Royce has considerable executive ability. She is a



Miss Mattie Royce points out sales features of the kitchen equipment carried in the Royce appliance department.

friendly person, and genuinely interested in the problems of the people she is serving.

Two months after her brother had launched his novel selling idea, they decided to open an appliance store, to be used as an operating base.

Thoughtfully Miss Royce says, "Today when you start a business it isn't how much money you have, but how much courage."

And money was the scarce ingredient in this new venture. Mr. Royce says, "When I started out, Dun & Bradstreet rated my credit as less than \$400. Four months later, it had jumped to \$10,000."

But as good as money was the credit he had been

building up in his previous business experience. Wholesalers respected his judgment and were willing to back it up with equipment. His sister was also established with appliance dealers and distributors, and she used the money she had on hand along with the credit that she had established.

The store features, in addition to a complete line of oil fired and warm air furnaces, water heaters, kitchen cabinets, and various household appliances.

"The success that we have had so far" says Mr. Royce "is due to the application of correct principles of salesmanship. It has not been so much the possession of a great amount of experience but rather a readiness to try new ideas to determine their worth."

It has been apparent that this spirit has motivated the business built by Mr. Royce, and a willingness to work long hours and ability to recognize opportunities have also contributed to its success.

The interesting thing about the business operation of the Royces is their flexibility and refusal to be restricted by past custom. Where basic principles are involved, they have done their best to conform to practice, but experimentation has been a vital part of their career. Development and expansion of ideas such as the portable furnace demonstration are essential to the future of any business. No matter what present conditions may be, it is certain that the time will again return when promotion is necessary. At that time all merchandising tools and ideas can be studied and analyzed for adaptation in each contractor's own particular business.

Changes in Social Security Law

RECENT revision of the federal social security law has changed the old age and survivors insurance system in important respects for 45 million workers, or nearly three of each four of the 61.4 million persons now in civilian employment.

Amendments affect these large groups in various ways: the 35 million workers now in covered jobs, whose benefit payments when they retire at the age of 65 or later as figured under the old law will be increased by an average of about 77½ per cent; 10 million employees and self-employed persons, not previously covered by the program, who can be brought into it after 1950; and about 3 million already retired workers and family beneficiaries who will now receive larger monthly benefit checks from the government.

The increase in payments takes effect with the October checks which reflect the payments to which the beneficiaries were entitled for September.

Some 750,000 men and women 65 or older have become immediately eligible for monthly payments from the government altho not previously entitled to them because of too short periods of employment. For these workers the required period of work to qualify for benefits is cut to 18 months.

Other changes in the law increase the social benefit payments to outside OASI by including needy persons 18 years and older who are permanently and totally disabled, in the federal-state assistance program; and by increasing the federal share of payments for certain other social services.

Those already receiving benefits will find the recalculation of their benefits a simple matter. The new law contains a table which sets forth the new primary monthly amounts compared with the old which ranged from a \$10 minimum to a \$46 maximum. The new range is from a \$20 minimum to a top of \$68.50. The primary payments are those made to a retired worker, exclusive of any benefits to which members of his family may also be entitled.

The increase in primary benefits to those already getting them range from about 49 per cent to 100 per cent. The smaller payments are increased more proportionally than the larger ones. All less than \$16 monthly are doubled.

Beginning with January 1, 1951, the social security tax of 1½ per cent each on employee and employer will apply to the first \$3,600 of wages instead of \$3,000 as at present. The tax rates increase in 1953.

Complete Records Support Tax Deductions

ARTHUR ROBERTS

Pompton Lakes, N. J.

TAX rates are high so the taxpayer should take every permissible deduction. But, in order to get all that's coming to him, he must have records to back him up so that he can justify the deductions in case they are challenged. The Treasury Department is checking returns more minutely than ever before because it needs every cent of revenue to meet government expenses.

Many taxpayers lose the benefit of deductions because they lack the auxiliary records that provide a breakdown of the book figures. These taxpayers may enter the correct figures in the books, but they have no supporting records that can be checked in detail to show that the figures are correct. The result may be a refusal of the Collector of Internal Revenue to allow certain deductions and a penalty imposed for the difference between the tax paid and the tax the Collector contends is due.

Required Records

Here are the records the dealer should keep in satisfactory detail and file away systematically for reference in order to justify the entries in his books and give him all the tax benefits to which he is entitled.

1 *Check book.* Check book stubs and cancelled checks are essential in justifying tax deductions. Yet, we have known many cases where, in the haste to write checks, the stubs were left entirely blank and when an audit was made later it was difficult to identify the exact reason for the payment. Usually

the cancelled checks themselves will clarify the matter. However, in transactions of an involved nature, a subsequent audit, particularly if months have elapsed since issuance, may fail to identify the exact details of the transactions. As a result the entries are not clear on the books and they may give trouble on the income tax return. At the time a check is issued, the payee's name and the reason for the payment should be entered on the check stubs so that the proper accounts can be debited or credited in the books. Large companies, of course, handle such details systematically, but the small and the moderately-sized dealers are often remiss here. This is particularly true of those who do their own book work or who have part-time bookkeepers.

Cancelled checks should be filed away with the bank statement. Often a dealer will check this statement and let the cancelled checks lay around in desk drawers where they eventually go astray. This is bad office practice because cancelled checks are helpful in making certain that all legitimate deductions are taken on the return. They serve as verification in case of a challenge by the Treasury.

2 *Bank book.* It is important to report income accurately. If the daily receipts are deposited in the bank to the penny, the bank book will help verify the accuracy of business income as reported.

Moreover, the bank deposits will agree with the cash book entries. If the dealer dips into incoming cash to pay bills or for personal withdrawals he will have difficulty reconciling his cash book entries with the bank deposits. In the event that the income he reports is questioned it may be hard to justify his figures.

3 *Bank statement.* To guard against errors, this statement should be checked promptly upon receipt. Usually a bank statement carries a notation to the effect that it must be checked immediately and errors reported within ten days, otherwise, the bank will not be responsible for errors. Variations between a dealer's records and the bank statement may prove disadvantageous to the taxpayer unless he takes immediate steps to have them corrected.

Bank deposits, if they represent income as received, help verify this figure on the tax return. The cancelled checks verify outgo. The difference is not net income, but when the taxpayer's bank statements show the movement of income and outgo as received and disbursed, he is on a safe and sound footing when filing a return.

4 *Petty cash slips.* On disbursements for small items, such as postage, it is more convenient to pay in cash. If the cash is paid out of pocket or out of the cash drawer, there is no systematic record kept of these expenses. Often the dealer forgets to list them and a sizable sum may be disbursed yearly in this way, never reaching the books, hence, these sums are never listed on the tax return. The dealer cannot approximate his petty cash disbursements even if

he knows that they average so much a week. He must have petty cash slips covering the exact amounts to be sure of an approval from the Treasury.

The way to install a petty cash fund is to draw a check for \$25, or about the amount the dealer pays out every ten days. Cash the check, put the cash in a special drawer and pay for small items from this fund, putting a slip in the drawer to cover each purchase. Petty cash slips can be obtained in a stationery store in pad form for a few cents. When the fund gets low, charge the disbursements to the proper accounts in the books, draw another check to petty cash to replenish the fund and repeat the process. Using this system, the dealer need not miss out on many deductions over the year. This is recognized accounting procedure, yet many dealers do not use it. The result is not only a loss on tax, but it prevents them from determining true net profit.

- 5 *Bad debt ledger or file.* The taxpayer is not permitted to deduct for a bad account except in the year it is ascertained worthless. The decision as to when the account is written off is not defined by the Treasury. Nevertheless, the taxpayer must be able to convince the tax officials that he has written off an account in the year he found it worthless, not in an earlier or a later year. When a taxpayer transfers an account from his accounts receivable ledger to a bad account record, this is usually proof that he considered it worthless in the year he took such action. So, he may deduct for it in that year with reasonable assurance that it will be sustained.

- 6 *Depreciation schedules.* Depreciation, because it is only an estimate at best, is a troublesome account to the taxpayer and the Treasury. However, where the taxpayer keeps detailed depreciation schedules showing original cost, life-span in years, annual deductions, improvements and repairs made on depreciable proper-

ties, the unrecovered cost to date, etc., he stands a better chance of having his deductions approved without challenge.

Depreciation schedules are helpful in getting satisfactory deductions when equipment is traded-in or written off. In some instances, in the case of abandonment of a depreciable property, the taxpayer may not have written off all the

Points To Watch

1. *Check book*
2. *Bank book*
3. *Bank statement*
4. *Petty cash slips*
5. *Bad debt ledger*
6. *Depreciation schedules*
7. *Withholding tax form*
8. *Inventory sheet*
9. *Detailed journal entries*
10. *Miscellaneous supporting papers*

depreciation to which is entitled. As a result he may be able to deduct for loss of useful value. This might be questioned if he depends entirely upon a reserve for depreciation account in the ledger, which seldom carries the necessary detailed information, only the amounts that are charged off annually.

Some taxpayers carry reserves in which all the depreciable assets are totaled for value and a flat rate deducted on the over-all sum. Such records always cause trouble if a question arises as to the accuracy of the deduction. To play safe, the taxpayer should have a depreciation schedule apart from the books for each piece of equipment or class, and record the essential facts thereon.

- 7 *Withholding tax form.* This provides a separate record for each employee, either on a card or a looseleaf sheet, obtainable at stationery stores. These forms simplify the sending of withholding monies to the Collector, minimize errors and penalties.

- 8 *Inventory sheet.* An important factor in the determination of net profit is the valuation placed on inventory at the end of the year. If inventory is valued too high, profits will be too high on paper and you will pay an excessive tax. If inventory is valued too low, profits will be too low on paper and you pay too little tax with a good chance that you will be penalized when the Treasury checks your report.

Inventory should be carefully listed, item by item, on an inventory sheet purchasable in stationery stores, recording prices at cost or market, whichever is lower. Unless your inventory valuation is backed by an actual count detailing the items and prices, you will have difficulty defending your inventory figure if it is challenged by the tax office. Do not take inventory at selling prices or you inflate your tax expense.

- 9 *Detailed journal entries.* Probably 95 per cent of all transactions are the run-of-the-mill type covering items of income and outgo which are identifiable easily by their entries under special columns or in books specially kept for the purpose. But some transactions require considerable explanation, particularly if they amount to sizable sums. Say that the taxpayer has a fire not entirely covered by insurance. If he loses \$1,000, this is deductible, but he should enter in his journal or in some supporting record a complete explanation of the loss. These unusual transactions are best handled through a general journal, debiting and crediting the proper accounts, writing complete details of the transaction un-

(Please turn to page 150)

Recommendations For Control of Industry

IN accordance with a request from the National Security Resources Board, the National Warm Air Heating and Air Conditioning Association had a task group set up a series of recommendations on wartime controls. This group analyzed the problems that are peculiar to the warm air heating industry and compiled a report which offers suggestions on the regulation of the industry in the event of an all-out war and total mobilization.

Reference to the term "warm air industry" or "warm air products" or "warm air equipment" includes manufacturers of the following products:

- Warm air gravity and forced air furnaces
- Registers and grilles
- Pipe, fittings and ducts
- Blowers
- Filters
- Automatic controls

This report assumes that certain restrictions on manufacture and use of materials will be necessary under a wartime economy. There will be a continuing requirement for warm air equipment for military housing and buildings, necessary civilian repair and maintenance, and possible large demands for defense housing, aggravated by widespread dispersal of industry. It is estimated that 50 per cent of the present warm air industry production rate will be sufficient to meet these requirements. Shipments of furnaces for 1949 was 717,785 units. Production of registers and grilles, pipe, fittings and ducts, blowers, filters and controls historically follow furnace shipments. The potential yearly furnace production capacity of the industry is approximately 1,200,000 units.

It is estimated that there are 250 manufacturers of furnaces, registers and grilles, pipe, fittings and ducts, blowers, filters and control devices.

REGULATIONS AND CONTROLS

Units permitted to be made under this continuing program should be subject to standardization and simplification (within each individual manufacturer's own designs and manufacturing practices) as to models produced and critical materials used. Quantities to be made under the program should be controlled by authorized quotas, with due allowance in setting the quotas for those parts of the industry which have converted to war work so that the remaining manufacturers may be given sufficient quotas to make up for this loss in capacity and fulfill the requirements.

It is generally conceded that the allotment of raw materials under definite programs such as were in effect under the Controlled Materials Plan was as efficient and equitable a means of administering production controls as it is possible to achieve in a wartime, shortage economy. It is the recommendation of this task group, however, that the wartime equivalent of the plumbing and heating division, having charge of the affairs of the warm air heating industry be set up in such a way that it can in the true sense and in all respects, act as the claimant agency for the industry. It is our contention that, if the iron and steel, or copper, or other branches find it necessary to restrict the use of these metals, such restrictions should be given to the consumer product divisions for incorporation into their orders and administered by them. Similarly, if the plumbing and heating division determines that a program is necessary making a given quantity of warm air products per month available, it should be their responsibility to arrange for the coordination of this program with the other divisions having to do with containers, blowers, electric motors, oil burners, controls, etc. A limitation order covering warm air products should be the final word on that subject without requiring reference to any separate regulations or conflicting with other programs which would interfere with the orderly securing of either raw materials or components.

DISTRIBUTIVE REGULATIONS

A means of moving manufactured products to the consumer through regular trade channels must be provided. The system should give the distributive chain a means of taking warm air units or repair parts into their inventories for ready use in emergencies and, at the same time, should provide the consumer with easy access to repair and replacement parts. New units, produced under a definite program, should be made available where their use is certified by proper authorities. Limitations on suppliers' inventories also appear necessary.

OTHER ORDERS AND DIRECTIVES AFFECTING THE INDUSTRY

Any future limitation on warm air equipment should be confined simply to production quotas and simplified practices without reference to the types of fuel to be burned in these units. Limitations governing the delivery of fuel to any installation will no doubt, have to be instituted and these would automatically act as a

controlling factor in the sale of furnaces, and, hence, further control would be deemed unnecessary.

The warm air industry had no unique problems of plant repair and maintenance, packaging materials, manpower, transportation, or power and fuel which differed in any great respect from any other industry trying to do business in wartime. With regard to manpower controls, however, we might note that the coordination which we have suggested for the plumbing and heating division with other production divisions on authorized programs would be equally necessary in this field. If the necessity for producing warm air products is recognized and material, component, and production quotas are set up, manpower to implement such a program should also be provided for by close liaison between the plumbing and heating division and the manpower agency.

REPORTING FORMS

Reports from manufacturers and distributors should be required as a means of control and as a protection for the legitimate concern. However, the frequency and amount of information called for in the reports should be kept to a minimum, with due regard being given to the availability of the information called for on many of the reports required by other government agencies in wartime. The continued approval of all reports by the Bureau of the Budget is, of course, recommended.

CONVERSION PROBLEMS, PRODUCTION CYCLE

Undoubtedly a considerable portion of the warm air industry would convert to the production of direct military or other war material in the event of a war emergency. The regular production of the other segments of the industry will be sharply curtailed. This task group urges a careful study be made of the possible consequences of too abrupt an imposition of wartime regulations and of the benefits to be derived from an orderly and planned conversion. It was noticed at the onset of World War II that the government displayed a marked tendency to impose production cut-backs and freezes immediately with the opening of hostilities. These were motivated by a valid sense of emergency and the philosophy that sacrifice was necessary for psychological reasons, if for no other. The result was the waste of raw and semi-finished materials, the dispersion of manpower and the idleness of many plants.

The task group emphasizes that the facilities now available by manufacturers in the warm air heating industry for the manufacture of war goods should be fully developed in the event of war and that the National Securities Resources Board should not permit duplication of such facilities until the present production facilities are exhausted.

War production facilities in the industry include a broad list of products, of which the following are only a few:

Air landing mats

Ship storage tanks
Aluminum aircraft parts
Steel airplane hangars
Munition boxes
Steel landing craft

The industry is abundantly equipped to construct parts and complete assemblages requiring press equipment, spot welding, butt welding, induction resistance, arc and gas welding. In addition to steel and aluminum fabrication, the industry is very well equipped to manufacture cast-iron parts.

It must be recognized that conversion requires considerable planning and change-over time, including not only the scheduling of war production but also the changing of tools and machines, making of patterns and dies, etc., plus the training of personnel. To the extent practicable, a working force is more efficient and productive in familiar surroundings and the least dispersal and transfer of working forces possible within the plant and in the nation will result in the highest overall production. Further, use of vital transport, housing and municipal facilities by migrating workers is held to a minimum.

This task group recommends, therefore, that it will be of utmost benefit to the war effort to give as much advance notice as possible of any curtailment in production of warm air equipment, with resultant benefits accruing from an orderly conversion. This may be implemented by including in the limitation order at the time of issuance a provision especially covering the effective date when its restrictions would take effect. Wording along the following lines is suggested:

"Effective Dates: On and after (49 days from date of order), no warm air heating equipment covered by this order which does not conform to the limitations established herein shall be produced, provided that the foregoing shall not prohibit final fabrication or processing prior to (70 days from cut-off date), of materials put into process prior to (49 days from date of order)."

ORGANIZATION AND PERSONNEL

It has been stressed above that any organization developed to administer controls over the warm air heating equipment industry in the event of a war emergency should also be empowered to handle matters of material allotment and integrate its programs with other orders and regulations issued by other divisions of any wartime production agency. In order to effectively administer in this fashion, the organization should be made up of personnel intimately familiar with the problems of the various industries represented and who are now considered leaders in the industry and headed by a man who is also well acquainted with the workings and procedures of other government agencies, so as to obtain the greatest degree of coordination and efficiency.

A stronger field organization, equipped and with authority to handle much of the administrative load without reference to Washington is also recommended.



Arnold Kruckman's Washington Letter

Mechanics of D P A

THE readers of AMERICAN ARTISAN naturally are wondering how the National Production Authority will operate. The plan and the program will change from time to time, as we know from experience during World War II. But here is the picture as it looks in Washington now. The whole structure is founded on the Defense Production Act which was made law early in September. The President, on September 12, issued an Executive Order by which he delegated most of the functions of the Act to various persons and Agencies. In the interests of clarity and simple statement, this letter will skip some of the details in this executive order so that that portion of it which is of primary interest may be more directly discussed.

New Coordinator

W. Stuart Symington, chairman of the National Security Resources Board, as forecast, has been made the overall boss of the entire DPA operation. His official title is Coordinator. It is interesting that Mr. Truman reveals his limitations in the form of the instrument by which he delegates his powers to Symington. In Section 302 of the order he gives Symington authority in these words — "In the interest of assisting the President to coordinate the functions delegated by this Executive Order, and on behalf of the President:

a) Resolve inter-agency issues which otherwise would require the attention of the President.

- b) Prescribe policy and program directives having the approval of the President.
- c) Obtain reports and information on the status of work in the various agencies designated in this Executive Order.
- d) Take such measures to obtain coordination of related policies and activities among the various agencies as he may determine.
- e) Advise the President on the progress of the Defense Production Program and make such recommendations as he may deem proper."

Secretary Empowered

In Section 701 he delegates to the Secretary of Commerce the authority given by Congress to the President in Title I of the act, which governs the operation of the application of priorities and allocations.

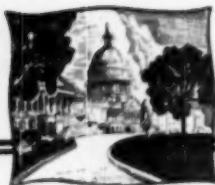
The President also issued Executive Order 10160 which requires every person who sold or delivered goods, or services, or offered them for sale, or delivery during the period from May 24, 1950 to June 24, 1950, inclusive, to preserve all his records for the period, relating to prices received or asked; and the cost of labor, material, acquisition and other expenses incurred in connection with such goods or services. The order does not apply to wages or salaries received by an individual; to the records of sales of agricultural commodities by the individual producer, nor to prices or rental for real property, rates or fees

charged for professional services, rates charged by any person selling or underwriting insurance, rates charged by any common carrier, or other public utility and margin requirements on any commodity exchange.

Agency Established

On September 11, by authority of the power given him by the President, Secretary of Commerce Sawyer issued an order establishing the National Production Authority in the Department of Commerce. Most of the industry divisions of the Office of Industry and Commerce of the Bureau of Foreign and Domestic Commerce in the Department of Commerce are transferred, with their personnel, to the National Production Authority. This included the division of iron and steel; metals and minerals; rubber; textiles and leather; chemicals; forest products; construction; machinery and equipment; general products; motion pictures; food; petroleum; fuels and energy. The Division of Small Business, and the Marketing Division of the Office of Industry and Commerce also were transferred to the National Production Authority with their entire personnel. Thus several thousand of the regular organization of the Department of Commerce was constituted the operating staff of the NPA. The action, by a stroke of the pen, gave the NPA a functioning human machine.

The internal organization was fur-



Washington Letter

ther defined in Section VII of the order thus: Administrator, Deputy Administrator, General Counsel, Executive Officer, Director of Public Information, Office of Labor Production, Office of Manpower Requirements, Office of Small Business, Assistant Administrator for Program Determination, and Assistant Administrator for Industry Operations.

The administrator, as forecast in these pages, is Major General William Henry Harrison. He comes from the International Telephone and Telegraph Co., was in the Signal Corps in World War I, and in the Supply Services in World War II; also, was important in WPB. It is obvious he not only has the sweep of mind identified with big business, but he leans towards the needs of the military. At this writing, no deputy administrator has been appointed. The general counsel is Manley Fleischmann, a Buffalo lawyer, who has been in the federal service in Washington at various times. The executive officer, a sort of glorified chief clerk, has not been appointed. Nor has there been an appointment of a director of public relations. However, Howard Chase, director of public relations for General Foods Corp., has been appointed consultant to the administrator. And Henry George Wilde, a Boston banker, who was associated with Gen. Harrison in other government activities, has been appointed assistant to the administrator.

Change of Name

The Office of Civilian Requirements, which is important to sheet metal contractors and the sheet metal industry, is the old Marketing Divi-

sion of the Office of Industry and Commerce. Many will remember Nelson Miller, its head, with whom they have done business in the past, especially during World War II. It is assumed Mr. Miller will continue as head of the unit under its new name. In the early stages of the NPA it has not been made clear whether the administrative chiefs will retain their jobs. The uncertainty has caused much discussion, and considerable doubt.

Heads of Divisions

It does not yet appear possible to identify those parts of the Commerce Department which will make up the Office of Labor Production, the Office of Manpower Requirement, and the Bureau of Program Determination. The Office of Small Business will be headed either by James L. Kelly or by Charles F. Hughitt. The Bureau of Industry Operation is headed by H. B. McCoy, who was director of the Office of Domestic Commerce. Under him come the divisions of iron and steel; metals and minerals; rubber; textiles and leather; chemicals; forest products; construction; machinery and equipment; general products; motion pictures; food; petroleum; fuels and energy. The division of steel and iron, is headed by Frank Hayes. Undoubtedly the division of construction will be headed by John L. Haynes, who was chief of the same division under its Office of Domestic Commerce incarnation. Mr. Hayes is also the head of the division on metals and minerals.

Here is the way the NPA operates on a given problem. Suppose the Army requires steel. Under Section I of Secretary Sawyer's order, there

is created an advisory committee on priorities administration. It consists of the administrator as chairman; and a representative of the NSRB; Department of Defense; Department of Interior; Department of Agriculture; Department of State; Department of Labor; Department of the Treasury; Office of International Trade, Department of Commerce; Economic Cooperation Administration; Atomic Energy Commission; and Housing and Home Finance Agency. There is also a Steel Industry Advisory Committee, consisting of representatives of the manufacturers of steel. These two advisory committees separately, and collectively, are called to consider the requisition of the Army. Their separate and collective counsel enables the Administrator to determine the quantity of steel that shall be given to the Army. On one side, the Steel Industry Advisory Committee, in theory, gives the administrator information about the ability of the steel makers to meet the demand. On the other side, the advisory committee on priorities administration, in theory, presents the presumed needs of those in industry the various agencies represent, and counsel the administrator in regard to the needs of its claimants. The priority committee, likewise, parcels out the steel orders.

Enough Steel

Of course, at present, there appears to be enough steel to meet the immediate military needs. It is not expected there will be any immediate stringency among civilian manufacturers, aside from the difficulties that

(Please turn to page 152)



RESIDENTIAL AIR CONDITIONING *Section*

*Indoor comfort—in all seasons
for homes and small business*

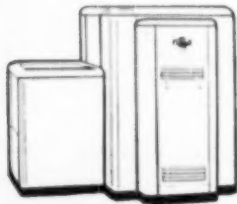


MARKS THE SPOT

*It marks the homes of
Waterbury's best salesmen!*



No—the Waterbury Dealer in Hometown, U.S.A. doesn't have that many salesmen on his payroll. But, nevertheless, these homeowners do contribute to every sale he makes. Month after month, in many ways, they are convincing their friends that Waterbury means real heating satisfaction. They speak, just as the Waterbury Dealer does, of the dependability, the true fuel economy, the genuine heating comfort of a Waterbury furnace. And their words are believed—*because they speak from experience*. They are the customers of other years—Waterbury users themselves. And they—as every Waterbury man can tell you—are the best salesmen a dealer could have.



Waterbury

FURNACES AND AIR CONDITIONERS

Over 43 Years of Warm Air Heating



the **Waterman-Waterbury Co.**

1122 JACKSON ST. N.E. • MINNEAPOLIS 13, MINN.

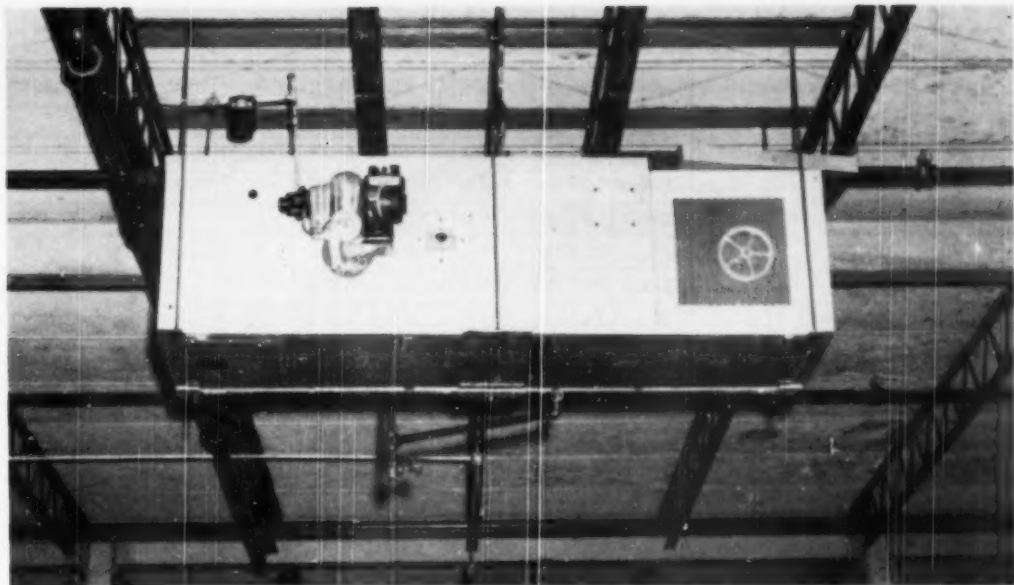


Fig. 1 One of the 19 suspended units installed in the building.

19 Suspended Heaters 1½ Acre Warehouse

Application of suspended oil fired warm air furnaces to this large warehouse proved to be of double benefit. Valuable floor space was released for other purposes and a comfortable atmosphere was provided for workers.

NINETEEN suspended oil fired warm air heaters installed by the Perkins Sheet Metal Works, heating and sheet metal contractors of Madison, Wisconsin, in the local warehouse of the Kroger Company exemplify the adaptability of the principle of warm air heating to the specific requirements often encountered in large commercial-industrial applications.

Warm Air Selected

In designing a modern efficient building specifically to meet the need of receiving, warehousing, and shipping the volume of foodstuffs required to serve local Kroger stores, Weiler and Strang, Madison architects, were con-

fronted with several considerations which influenced the decision to select a heating system consisting of multiple warm air units. These units are a comparatively recent development in the field of industrial and commercial heating.

Large Area

The single story expansive warehouse occupies approximately two acres and its total heat load, including fresh air for ventilation, approximates 6,000,000 Btu. The space requirements for housing equipment of sufficient heating capacity to meet this load cannot be overlooked today when considering the economic aspects of such a project. The floor area occupied by heating equipment

SUMMARY OF SUSPENDED WARM AIR UNITS									
LOCATION	NO.	NOZZLE	Btu. EACH	TOTAL	BLOWER		MOTOR HP.	STACK	OPERATION
					cfm	Rpm			
DRY STORAGE AREA	7	1.65 Gal.	200 M	1,400 M	2420	552	1/3	7" ϕ	RECIRCULATION
PRODUCE AREA	1	2.00 Gal.	243 M	243 M	2925	450	1/2	8" ϕ	"
" "	1	1.25 Gal.	143 M	143 M	1725	637	1/4	6" ϕ	"
" "	2	1.50 Gal.	182 M	364 M	2200	535	1/3	7" ϕ	"
SALVAGE AREA	1	1.50 Gal.	182 M	182 M	2200	535	1/3	7" ϕ	"
REPAIR GARAGE	1	2.25 Gal.	275 M	275 M	3300	470	1/2	8" ϕ	REC. 100% O.A. 3300 cfm
" "	1	3.25 Gal.	395 M	395 M	4800	400	1	12" ϕ	REC. 100% O.A. 4800 cfm
TRUCK LOADING AREA	1	2.00 Gal.	243 M	243 M	2925	450	1/2	8" ϕ	50% O.A. 30% Rec.
" " "	2	3.25 Gal.	395 M	790 M	4800	400	1	12" ϕ	100% O.A.
" " "	2	2.00 Gal.	243 M	486 M	2925	450	1/2	8" ϕ	RECIRCULATION

Total 4521 M

UNIT HEATERS, REQUIRED OIL ----- 37.30 GAL/HR.
 3-BOILERS, REQUIRED OIL ----- 9.5 GAL/HR.
 2- H.W. HEATERS, REQUIRED OIL ----- 2.0 GAL/HR.
 48.8 GAL/HR.

Fig. 2 Data on the characteristics of the units.

often necessitates either enlargement of the structure or acceptance of a reduction in valuable productive area. In any case, it represents an investment in space that cannot be utilized for essential purposes. Since the 19 suspended units installed in the Kroger warehouse supply heat to three fourths of its total area, loss of floor area in approximately 65,000 sq ft of the structure has been avoided. Approximately 4,500,000 Btu are supplied by the suspended units.

Height Limitations

In selecting a method for heating the Kroger warehouse, it was also necessary for the architects to observe height limitations imposed by an adjacent airport. This removed from consideration the usual high chimney that would be required in generating sufficient draft for high capacity equipment. To conform with this height limitation, each suspended heater is equipped with an individual prefabricated chimney. Since the heaters hang within several feet from the roof and height above the roof is limited, an exhaustor is mounted on the top of each chimney to insure adequate draft under all conditions of operation. Both the

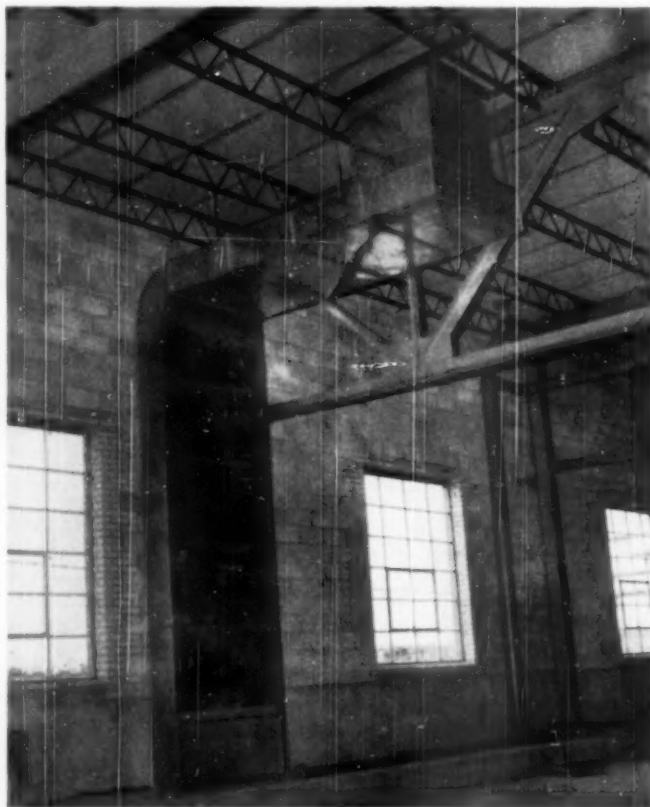


Fig. 3 One of the insulated ducts which exhausts from the floor of the truck loading area through a ventilator on the roof.

prefabricated sheet metal chimneys and exhausters were installed by Perkins sheet metal workers.

Distribution Problems

The large area of the building presented problems of temperature distribution. Its solution became one of reducing a major problem to small problems. Adequate distribution was accomplished by distributing the capacity of the individual heaters among 19 sub-areas, each apportioned to the heat load and controlled by a thermostat within the sub-area a unit serves.

Fumes from trucks entering and leaving the truck loading area necessitated compliance with the ventilation code of the State of Wisconsin. Both heating and ventilating requirements are supplied by five suspended units which are connected to fresh air intakes on the roof. Fumes are removed from the truck area through exhaust ducts.

The capacities of the warm air heating units installed in the dry storage, produce, truck loading, and garage areas are designed to maintain 60 F inside at -12 F outside. A fuel distribution system designed to supply No. 3 fuel oil to all oil burning equipment provides for the storage of 24,000 gallons in tanks buried outside. Oil is pumped from the outside tanks to a 275 gallon tank mounted high on an inside wall as shown in the plan, from which it is pumped independently and as required by each heating unit.

One of the special problems encountered by the contractor concerned ventilation of the several locker and rest rooms planned for the building. It was necessary to draw on the overhead heaters in the salvage and garage area to heat the rest rooms. The exhaust duct system of the rest rooms was lined with $1\frac{1}{2}$ in. thick duct liner to prevent transmission of sound between the

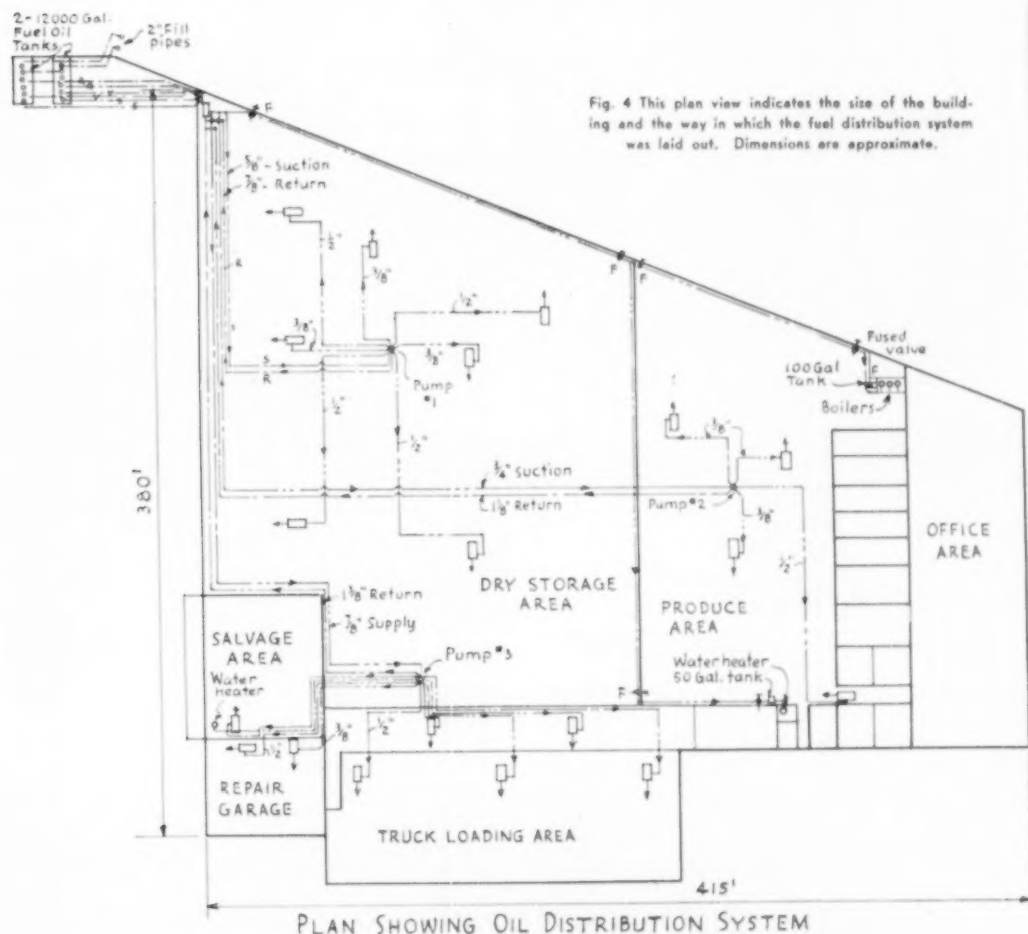


Fig. 4 This plan view indicates the size of the building and the way in which the fuel distribution system was laid out. Dimensions are approximate.

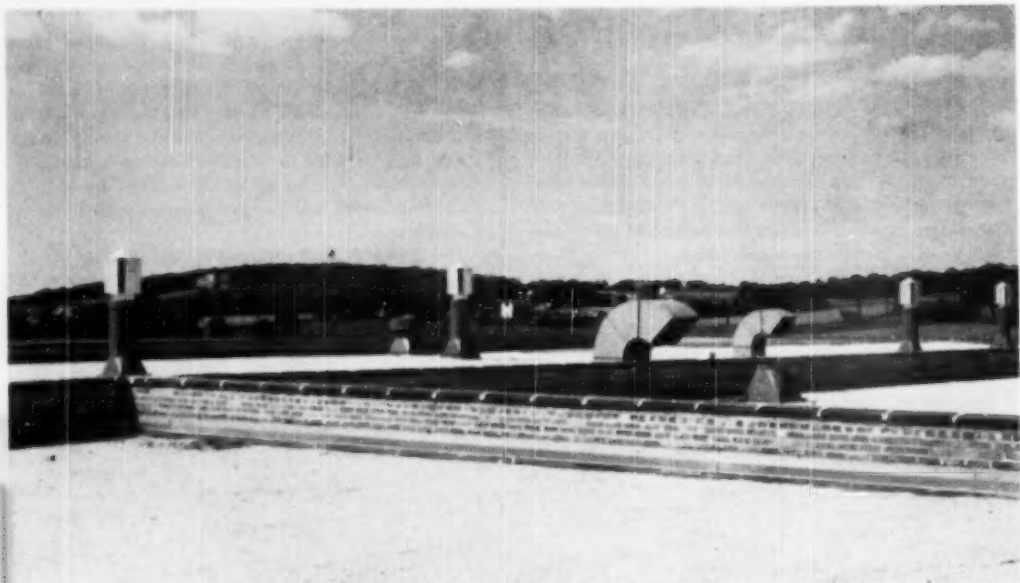


Fig. 5 One of the principal problems of the installation was the need for keeping stacks low because of a nearby airport.



Fig. 6 Closeup view of the prefabricated chimney fitted with an exhauster. These units made it possible to dispense with a high stack.

mens and womens rest rooms, which are adjacent to each other.

Insulated Exhaust Ducts

The exhaust ducts which take air from the floor of the warehouse and discharge through the roof ventilators were also treated with sound-deadening material. Intake grilles for these ducts had to have 60 per cent free area. Backdraft dampers were installed to prevent chilling of the building.

The roof ventilators which can be seen in the photos were installed complete with bases by the heating con-

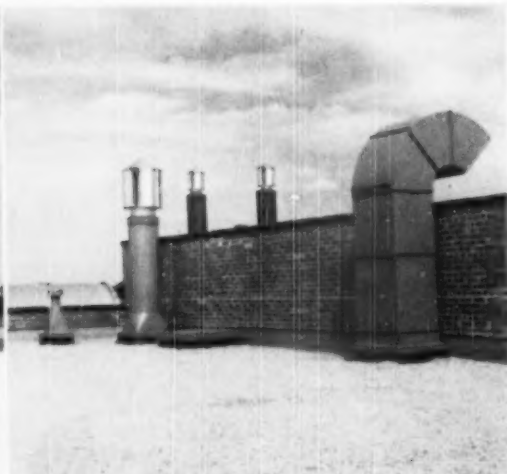


Fig. 7 At the right is one of the ventilators described in the text. These ventilators were fitted with manual dampers as well as backdraft dampers.

tractor. Manual dampers were provided to operate the ventilators.

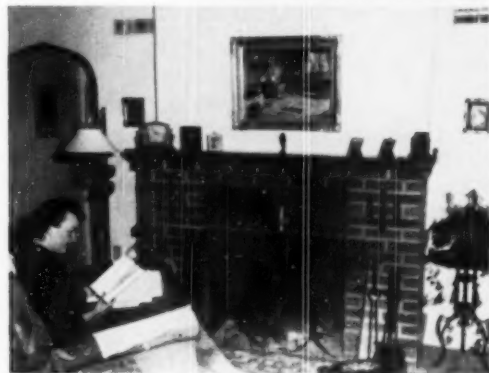
More Comfort

This application of warm air heat to a very large building is another evidence of a trend that has been in the making for some time. Many large companies have realized that the worker who is comfortably warm in winter will be more efficient and do a better job. The specification of warm air heat is firm recognition that there is more to comfort than just heat alone.

Sound Merchandising Ideas Help Sell Electric Air Filters

WALTER RUDOLPH*

Exterior and interior views of the Ulrich Sprinchorn home in Jamestown, N.Y., where this air conditioning contractor is his own best salesman of electric air filters. He points out that home cleanliness, better health potentialities, inexpensive operation and ease of maintenance are selling points.



Emphasis on greater comfort as well as our constantly rising standard of living have aided the market for the electric air filter.

We're speaking of merchandising the electric air filter as part of the complete package for a modern, comfortable home with pure, safe air. And we have a very good example of a dealer who entered this kind of selling, and is getting good results:

Direct Mail Used

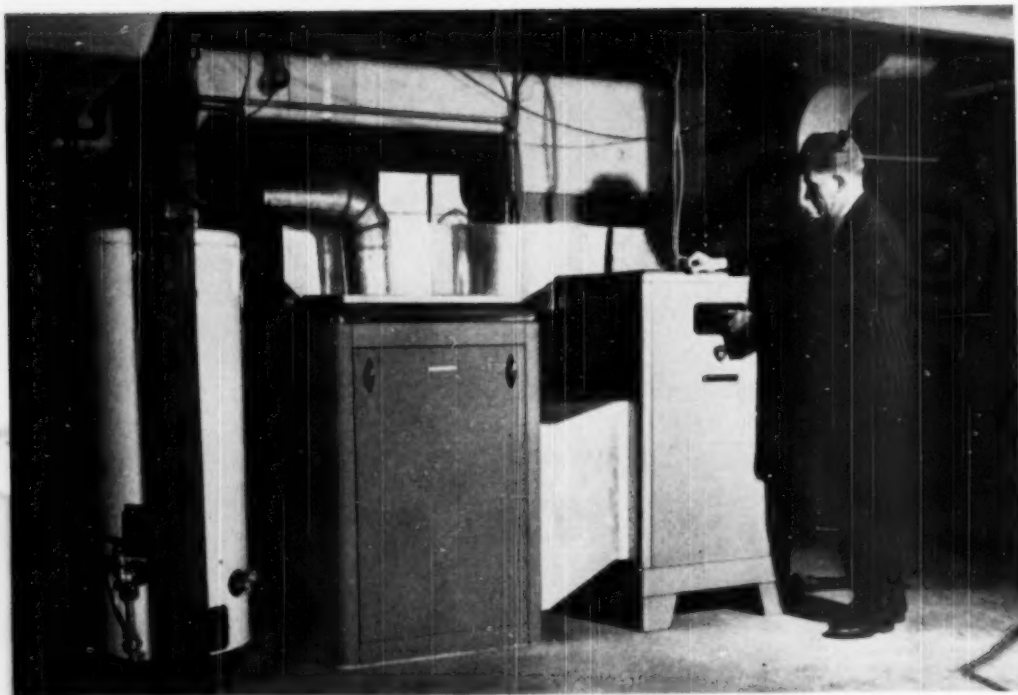
Sprinchorn & Co., 501 W. Third St., Jamestown, N. Y., has for several years been conscious of the selling potentialities of electric air filters, and has been building a case history, of interest to all in the industry.

"We initiate sales of electric filters largely through direct mail contact," said Solon Sprinchorn, who with his father, Ulrich, forms the firm partnership. "We think it is one of easiest ways to get a selling campaign underway. We lean heavily upon a substantial list, about 3,000 in number, of users or persons with whom we have had contact in the past in some business way."

Anyone who has used direct mail, of course, knows that just getting out the pieces and mailing them doesn't in itself produce any sales. First of all, to really know

THERE is a comparatively recent development in air cleaning which has been growing in importance. It has been given impetus by major manufacturers and public utilities, for obvious reasons, and good ones. It remains for dealers in residential air conditioning and related equipment to attempt its sale, as many are doing, profitably.

*Erie, Penn.



In the basement of the Sprinchorn residence, where the compact "package" of a complete home heating, air conditioning and filtering installation is shown off to an advantage to many visitors and prospective customers.

what kind of impression you're making with direct mail, you must analyze mailings and replies.

Best Prospects

Sprinchorns has tried picking out a certain section of residential streets, working with a city directory for instance, and user records, and gauging response to those mailings. As might be expected, the so-called middle class type of home (or you might say more restricted residential districts, with moderate to good incomes,) produces the electric air filter customer, usually by way of someone actually building a home, or remodeling, and in any case expressing interest in the complete heating and air conditioning plant.

"When you've got the spark of interest kindled, then your work is cut out for you," admits Mr. Sprinchorn. "We think one of the most intelligent ways to sell the customer, then, is to gain entrance to the home, in case of remodeling, or replacement of a plant, and work out a good presentation of the job you want to do.

"This is true in the case of a new home, too," he continued. "We use a black-and-white line drawing showing rooms in relation to each other, and in relation to ductwork, placement of the air conditioning plant and

filter, including the furnace, naturally. This constitutes a nice talking point or medium for selling the customer."

It was stressed that with this presentation you can estimate very accurately the cost of the installation. You can point out very simply that the inclusion of an electric air filter requires nothing special in the way of design, nor any special ductwork.

Sales Points

In the selling of an electric filter, salesmen bring out the following interesting points.

1. The house is more easily kept clean. This point, all other factors being equal, is a very important one to the housewife. Dust and dirt in the air are pretty well accepted, as by-products of modern industrial life and the bustling city.

Even children's clothes, as well as the children themselves, are kept cleaner. Housewives already using electric air filters (that is, part of their heating plant,) claim that where formerly they had to dust almost daily, now once a week suffices.

2. Better health of all house occupants is made possible through use of the electric air filter. Case histories of users can be cited here, available through manufacturers. Interest of late is high concerning the importance of pure air to health, just as pure food and pure water are insisted upon by everyone.

Of course the classic example of industrial air pollution was that of the Donora, Penn., disaster, when 22



Solon Sprinchorn studies one of the line-drawing layouts which is a prime requisite in this dealer's merchandising of the complete heating and air filtering plant. An intelligent presentation of this plan is afforded by this drawing, and an impression is made.

No special designing is necessary, Sprinchorn tells customers, nor any special ductwork—ductwork leaves our plant as part of the "package" (here overseen by foreman, Don Thorpe, sheet metal shop,) and is assembled in your home according to specifications.

people perished because of an impure smog, as it was called. Air purification commissions are now functioning in many areas, and the U.S. Public Health Service is studying the circumstances, to avoid repetition.

But electric air filter salesmen don't have to sensationalize, because every community has its sufferers from asthma, hay fever, dust and pollen allergies. If one of these sufferers is in a family, great relief is afforded by electric air filtering, as part of the heating or air conditioning plant.

3. Sprinchorn stresses that beyond the initial cost of the filtering unit, there is a very low operational cost.

It is completely automatic, the year round, yet costs no more than say a 100 watt bulb.

When the cost of operation is compared to savings effected through increased cleanliness (less laundry and cleaning outlay,) and better health (less doctor's fees,) it is quite reasonable.

4. This dealer points out that maintenance required by an electric air filter is negligible. The only attention it needs is occasional washing of the plates which collect the air-borne dust and pollen. And this requires no more than the twist of a valve.

"Of course, there will be the case, infrequently, where an adjustment in the controls, or replacement of a bulb is necessary," reported Solon Sprinchorn, "but that is the exception, not the rule. 'We've had no complaints at all along this line.'"

A Good Example

We should bring out that Ulrich Sprinchorn is his own best salesman of the electric air filter, as part of a complete home heating and air conditioning package. Of course some of his best arguments in selling stem



from the fact that several years ago he had his own home built with such a plant in the plans, and now he tells everyone how fine it is.

"There's no reason why sales of this comparatively new addition to the heating plant shouldn't soar for the next few years," contends Solon Sprinchorn. "Manufacturers are doing their best to educate the public along this line, and it only remains for dealers, to take on the product and discover how easily it can be sold."

Reducing Heat Loss Of House Increases Comfort Improves Performance Of Heating Plant

HENRY J. WINGATE*

The warm air heating industry is benefited by every good installation that goes into a house. The use of insulation in modern construction is an added assurance that the heating system will perform satisfactorily and provide *Indoor Comfort*.

FROM the standpoint of the warm air heating industry, unprecedented sales opportunities are offered by today's home-building economics and the attitude of builders and buyers.

Government agencies concerned with home-building are concentrating attention on lowered home prices. Operative builders are exploring every means to hang lower price tags on their product without sacrificing quality. Together, these policies spell warm air because of its low installation cost.

The home-buying public preponderantly favors warm air heat. A recent nation-wide survey of 16,000 families showed that 45.7 per cent prefer this type of central heating, 36 per cent radiant panel heat, and only 13.9 per cent radiators. More than half of all heating installations going into new homes today are warm air.

This means greater business volume for the warm air heating and sheet metal industries, provided that installations are engineered for the houses in which they are placed, so that homeowners will continue to be boosters for warm air.

Since the cost of home ownership necessarily must include, in addition to first cost, the costs of repair, maintenance and operation, it is essential that homeowners also save on these.

One considerable item in a household budget is the annual fuel bill and this is where greatest savings can be made, according to many studies made by federal agencies and college engineering staffs.

To achieve maximum fuel economy, the heating contractor must work with both architect and builder. The finest of heating systems will waste fuel and will not deliver the comfort it should unless heat loss characteristics of the house are reduced to a minimum.

If the builder or architect fails to take this into consideration, the heating contractor owes it to himself to suggest that the house be engineered for the lowest possible heat loss. Only in that way will the buyer remain sold on warm air.

A Yardstick

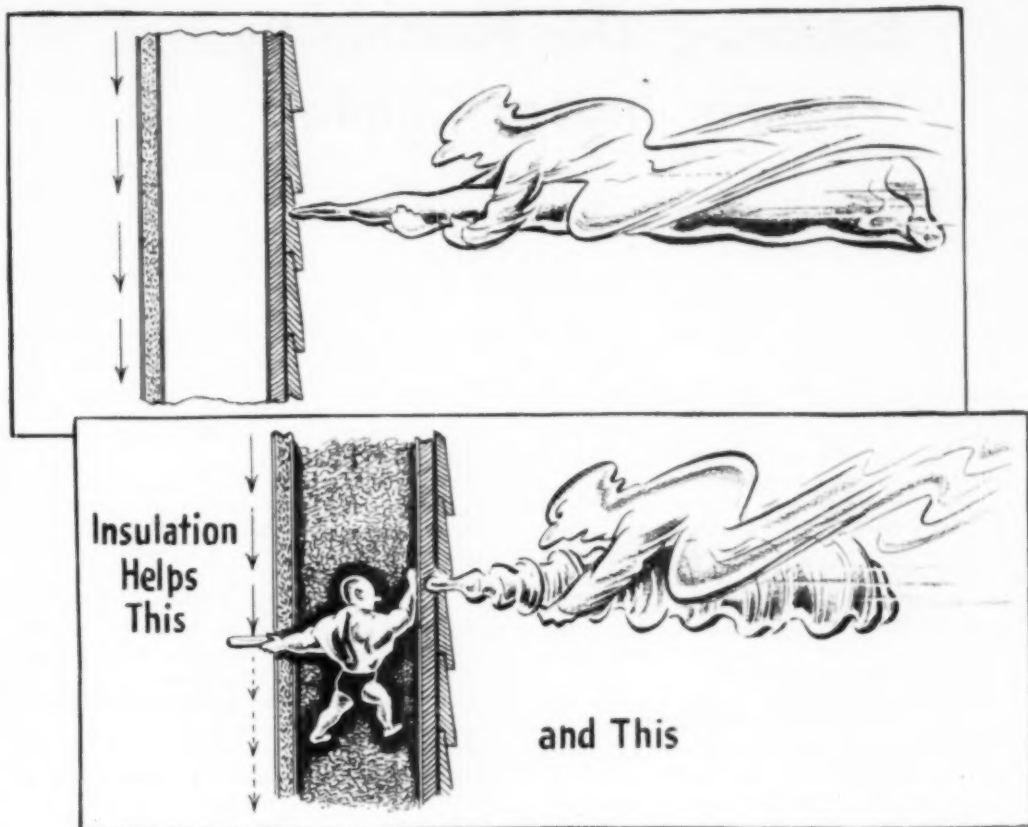
So important is this factor in the eyes of the Federal Housing Administration that the FHA has established a yardstick on heat losses and will not insure a loan on a property where the hourly Btu loss is greater than 60 times the total number of sq ft of floor area.

This performance seldom can be attained if the house is not insulated, numerous studies have shown. As any engineer knows, walls and roofs are not in themselves efficient heat barriers.

Added protection to slow down heat loss is required. When insulation is applied, heat loss is reduced in direct proportion to the reduction in the over-all coefficients of heat transmission and results in a corresponding decrease in the amount of fuel needed.

In the case of the typical 720 sq ft house being built in every section of the country today, the FHA permits a heat loss no greater than 43,000 Btu. In the 5,000 deg-day zone, this call for 1½ in. of mineral wool insulation in the roof area and none in the walls. If 3 in. of miner-

* Architectural engineer and writer, New York City.



al wool are placed in the roof and the walls are insulated a full 3-5 in. thick, the heat loss drops to 27,000 Btu.

Insulation Saves 35 per cent of Fuel

Different results will be found in different heating zones, but the National Bureau of Standards has found that generally the savings in fuel amount to 35 per cent if roof and all exposed walls are insulated with 3 in. of mineral wool, that storm windows save another 12½ per cent, and 4 per cent more of the fuel is saved by weatherstripping. The Small Homes Council of the University of Illinois has developed the same figure with a one story frame house and a 32 per cent saving in a two story frame dwelling.

Although heat loss from a dwelling is the chief factor that determines whether a given heating plant will produce the required comfort, insulation in exposed walls is almost as important, according to S. Konzo, professor of mechanical engineering at the University of Illinois.

Drafts due to cold surfaces in a room are a particular source of discomfort, and although they can be overcome to some extent by the heating plant, "good house construction will be more effective," he says. Insulation is the cure, Professor Konzo maintains.

"Room air that is next to cold wall and window surfaces will be cooled and will start downwards toward the floor. With large window surfaces the air velocity may be as high as 150 fpm by the time it reaches the floor and will extend considerable distances into the room. Insulation of cold walls and application of storm sash to windows will increase surface temperatures, and will, therefore, decrease the amount of cold air dropping down towards the floor, making better comfort conditions," he explains.

Engineers have discovered that with the outside temperature at zero and inside temperature at 70 F, the inside wall temperature is 10 to 11 F below the inside air temperature in an insulated house. With the structure insulated full-thick with mineral wool, wall temperature is brought within 2 or 3 F of room temperature.

Balancing The Heating System For Indoor Comfort

PART II

P. K. WADSWORTH
Cleveland, Ohio

TRY not to locate any low wall register, cold or warm air, under or within 18 in. of a window. The lady of the house will insist upon having drapes that touch the floor. She is the interior decorator, and unfortunately you can't do a thing about it. If you don't believe this, just try and tell your wife how the living room should be changed around. Sometimes it is considered good practice to put a floor register in front of a large window. In these cases, caution the owner not to block this area with furniture. You can compromise by having the davenport 2 ft away from the wall.

Avoid Double Registers

Whenever possible, avoid using the same duct to heat two rooms, as with a back to back register. These registers are very hard to balance because a higher resistance is imposed upon the ducts when both registers are open. In addition, the duct usually isn't large enough to supply two registers. Unfortunately, these registers

are usually located where the most balanced heat is required.

In addition each supply and return duct should have an individual adjustment so that the air can be properly directed. When this is neglected, it is very hard to secure maximum comfort.

Regulators Hidden

Quite frequently when adjustments are located in the basement, the builder will cover them up with plaster. In these cases, the installer should have known what the builder was planning to do, and a little ingenuity could have solved the problem. Perhaps the use of stack head adjustments would have been the answer. Usually time, which is money, can be saved by knowing what the builder's plans are for the house you are working on.

Sell Diffusing Registers

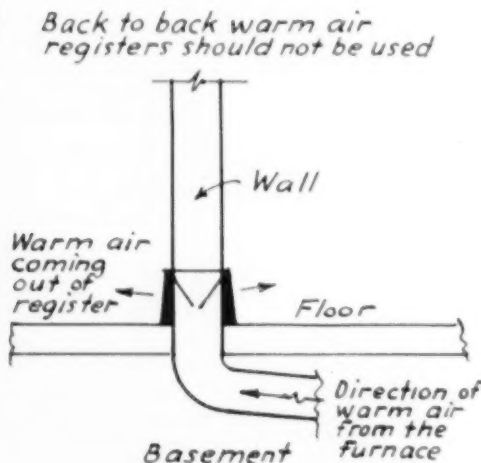
Remember that the more adjustments possible the better the heating job. In this line, an adjustable diffusing register is good to have if the buyer will agree to the extra cost. You can accomplish a great deal with an adjustable register. It will allow you to direct warm air to the colder sections of the room.

Very seldom is an air volume zone control system as effective as the regular thermostat direct control. When a large air zone damper closes, all the remaining air goes into the smaller zones. This causes temperature overruns before the thermostat has a chance to shut down the zone. In addition when a zone closes, circulation is reduced or stopped, then air stratification results.

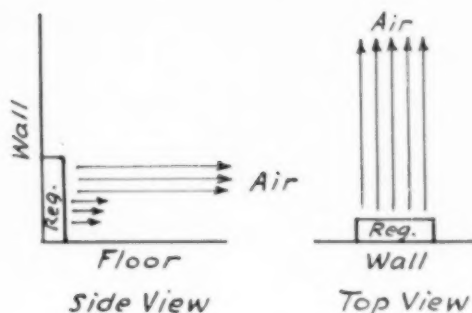
CAC and Zone Control

The only way CAC can be used in a zone control system is to install a by-pass duct and a mixing chamber above the furnace, so that either warm air or by-pass air is sent through the registers. However, the by-pass method is rather expensive to install.

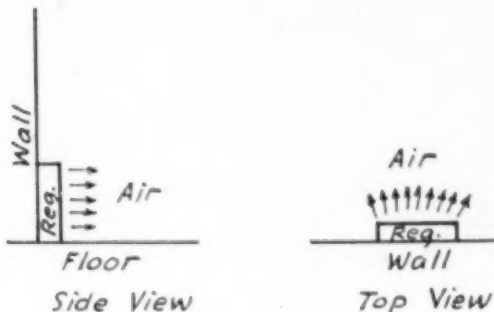
Many heating men feel that a zone or multiple thermostat system is best for large homes, because weather con-



Conventional Register



Directional Flow Register at the same location



ditions can easily change the way different rooms will heat. With only one point for turning on the heat, a cold wind from the north will chill off the house on the north side. If the thermostat is on the north side, the south side will overheat. If it is located on the south side, the north rooms are cold. The same holds true for the effect of the sun hitting and warming one side of the house. What has been said above can and will affect the heating of a home. The best solution would be to have a thermostat in every room, but heating systems can't be economically designed that way. Actually, in large homes, better results can be obtained if more than one furnace is used. Sometimes it is a cheaper installation, because there is less ductwork. A multiple furnace system gives better control. The ducts are shorter, remain warmer, and don't vary so much in register temperature. In addition, CAC can be used very effectively. Taking everything into consideration, whenever more than one thermostat is needed, it may be better to use a multiple furnace control for the best heating results.

Banish Drafts

In the case of large windows, better results are obtained if there is a register at the bottom of the window which can direct warm air against the window. This keeps the window warmer and prevents a cold wedge of air from forming a draft. In addition, this heated window won't steam up so easily when outside temperature drops.

Forced warm air furnaces can be located in any section of the basement. For best results a gravity warm air furnace should be centrally located with short supply ducts. The important principle of gravity heat is to keep system resistance to a minimum. This furnace location, however, is controlled to some extent by chimney location.

In a gravity system, never run a return duct over the top of the furnace. The heat from the furnace will rise and heat the return air and alter the temperature difference between the cold air and the warm air side. It is this temperature variation which creates the pressure difference that circulates the gravity air.

Along the same lines, gravity air in a cold outside wall causes circulation to be slowed down, because the cold duct chills the warm air.

Long Runs Mean Trouble

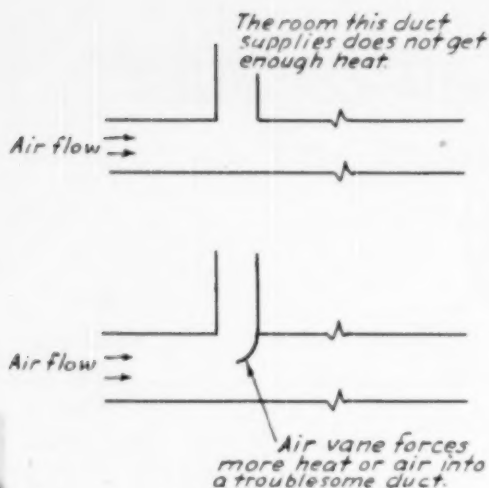
In warm air heating long runs and runs with high resistance are the source of trouble. Do everything possible to eliminate or help these runs. Usually the front, top, and back locations on a furnace are the hottest. Being the hottest, more air velocity is developed. These are the locations that should be used for the longest runs.

The thing to remember is to keep resistance to air flow low in both the supply and return air ducts. If this can't be done, install a blower.

A room over a garage is often one of the hardest rooms to heat. Experience has shown that a furnace location as close to the garage as possible gives the best results. The probable reasons are that the supply ducts don't get so cold and that a certain amount of gravity heat before the blower goes on helps heat this room. These ducts usually go through the garage wall and unfortunately hardly ever have enough insulation; so the shorter supply runs will be more effective.

Heating the Garage

Very seldom can a garage be heated satisfactorily from a central heating plant. It is better to heat this room with an overhead heater, which can be controlled by a thermostat in the garage. The only exception is when the garage is used for a relief zone in a zone con-



trolled system. Of course, never locate a return in a garage. Fumes from the car might affect people living in the home.

The recreation room has been a major problem for a lot of contractors. To start with, one must recognize that the heat loss of the basement doesn't vary as much as the rest of the house. The temperature of the earth stays pretty much the same the year round. So, in milder

weather this room has more need for heat than the rest of the home, because the walls are colder in the basement. In addition the basement registers are the lowest in the house and sometimes a stack effect sucks out the basement heat when the blower is off.

The solutions to this problem are:

1. To use 20 per cent over-sized ducts so that in mild weather there is enough heat.
2. Setting the blower for CAC.
3. Sealing poor fitting basement windows with caulking or storm windows. It is difficult to buy steel casement windows that fit tightly. A loose fitting window will quickly chill a room especially when a wind is blowing. Just put your hand in front of one of these windows in the winter, and you will feel quite a draft.
4. Proper conditioning of the concrete floor — see University of Illinois Bulletin F 4:3 on concrete floors, issued by the Small Homes Council.

Bathrooms often present a problem, particularly tile bathrooms. Tile has the unfortunate facility of holding cold, so set the system for CAC to keep a constant warmth in this room. In addition, use high side wall registers in this room — even though they may not be used elsewhere in the home. This is necessary to prevent the flow of air from striking the occupant. This room is so small that any air from the register will hit someone and cause a sensation of chill. Frequently the addition of a directional flow register will help.

Regional Use Of Steel Causes Shortages

THE USE OF STEEL has spread more rapidly than the decentralization of steel making in the United States in the last 10 years, and is largely responsible for the regional shortages despite record breaking output, the National Industrial Conference board reported.

The regional gap between use and output has widened since prewar days, the report said, with a larger share of steel output now shipped from areas with surplus capacity into regions with insufficient output.

Midwest Gain Outstripped

"It has doubled in the mountain region, and on the west coast and in southwestern and north central regions it has risen even more," the report said. "The New England and southeastern states also show sizable gains."

As a result, the great steel using area of the midwest is consuming a smaller share of the nation's output than at any time since World War I.

In 1937, 61 per cent of domestic

shipments went to the five big consuming states of Pennsylvania, Ohio, Indiana, Illinois, and Michigan, while in 1947-48, these states received only 51 per cent of all shipments.

Big Gains Listed

Actual shipments to these states increased by just over 40 per cent between 1937 and 1947-48, while for the country as a whole shipments of finished steel rose 70 per cent—from 36 million tons to 60 million tons, the report said. Current shipments were said to be even higher.

The big gainers, according to the board, are:

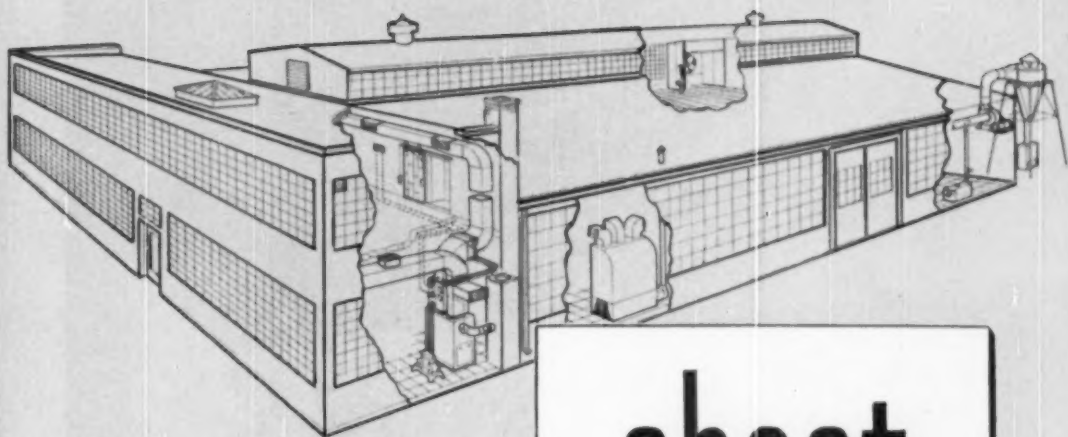
1. The west coast—up from 5.6 per cent of total output in 1937 to 7.6 per cent in 1947-48.
2. The southeast—up from 3.7 per cent to 4.5 per cent.
3. The southwest—up from 5.2 per cent to 7.3 per cent.
4. The north-central and mountain regions—up from 5.5 per cent to 7.6 per cent.

5. New England—up from 3.1 per cent to 4.4 per cent.

"Altogether, these areas, which accounted for 23.1 per cent of 1937 shipments, received 31.4 per cent of all steel shipped in 1947-48," the board said. "Their actual tonnage consumption of steel rose 131 per cent."

Of the individual states, California increased its share of the nation's steel market the most, gaining 1.9 to account for 6.5 per cent of the total. Pennsylvania was the biggest loser, or 5.4 per cent. In 1948, shipments to Pennsylvania comprised only a tenth of total shipments, while 30 years ago, it absorbed nearly a fifth of the nation's output going to domestic consumers.

Michigan, now the nation's largest consumer, registered only an eighth of domestic shipments in 1947 and 1948, but "higher automobile output no doubt increased its share in 1949 and in the current year," said the board's analysis.



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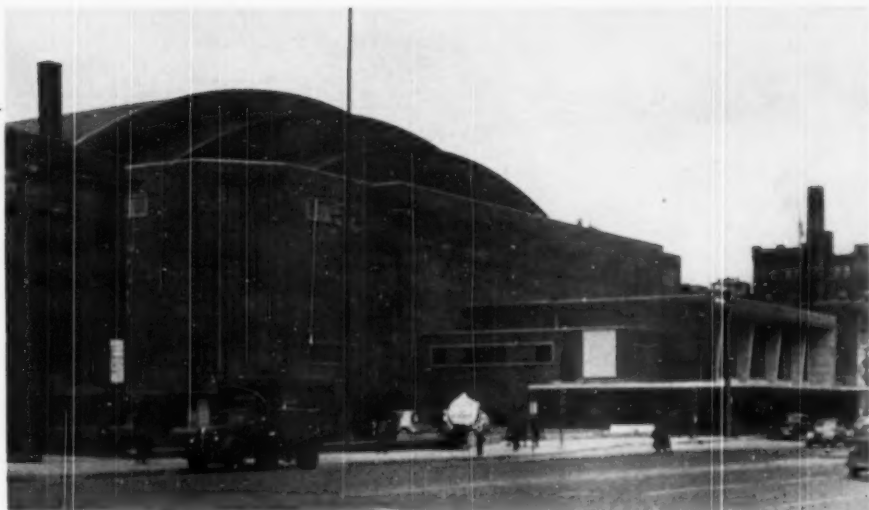


Fig. 1 View of the Arena from Kilbourn Ave. Copper roof ends can be seen. Aluminum gravel stops were used on the various canopies.

Copper Sheet Metal Work & Aluminum Coping Specified For New Milwaukee Arena

L. T. BRUHNKE
Wauwatosa, Wis.

One of the largest sheet metal jobs in the Milwaukee area was the new Arena built by the city. Total cost of the building was \$5 million. This story on the outside sheet metal work is immediately followed by a story on the heating and ventilating system.

THE Louis Hoffman Co. of Milwaukee had a \$50,000 contract for aluminum scuppers, downspouts, coping, stationary air intake and exhaust louvers, stainless steel door frames and the zinc covering on the skating rink insulation. They also furnished the metal clad doors, copper roofing and copper covered doors going to the roof.

End Sections Of Copper

Originally, the entire roof was to be of copper but the expense was considered too great. However, Hoffman did put on about 20,000 lb of copper on the end sections of the stepped roof as can be seen in the photo. A feature of the end sections was that no solder was used and enough expansion joints were provided so there will be no buckling or tearing. According to Angelo Hoffman, head of the company, many copper roofing failures are due to economizing on expansion joints.



Fig. 2 Stainless steel used in the door frames was so thin that welding was difficult. A copper backing strip was soldered to the back side of the miters.

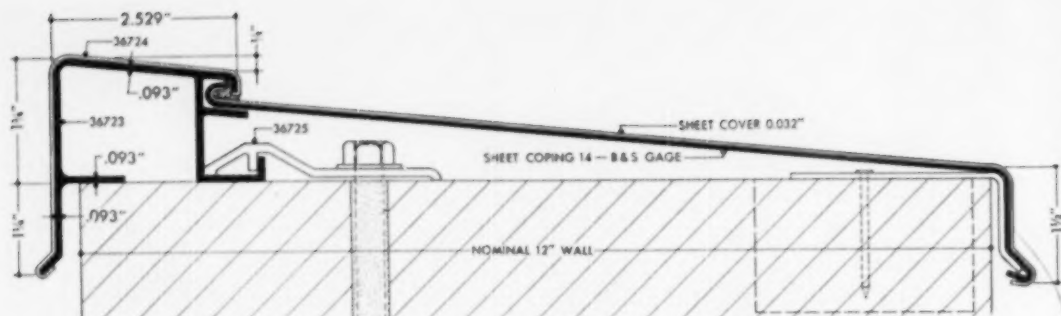


Fig. 3 Sectional view of the aluminum coping

The design of the end sections can be observed in the photo. The horizontal lock seams are staggered. The standing seams are held with clips screwed to the wall every 12 in. A standing seam was used to fasten the next sheet to the previous one. With this construction, the copper can move in either direction. The tops of the sheets are fitted under the lap so that water cannot get behind the copper.

Unlike the old Auditorium, the brine pipes for ice shows are embedded in concrete. The insulation under the pipes is covered with unsaturated asbestos felt laid in hot asphalt. Care was taken not to get any asphalt on the surface. Talcum powder was sprinkled on any asphalt on the surface and then the entire area was covered with zinc sheets lapped 1 in. and spot soldered. After the brine pipes were installed and tested, concrete was poured.

The louvers for the ventilating intakes and exhausts were made of aluminum. The frames were welded in the shop while the blades were riveted in. These were delivered to the mason to be bricked into the walls. All aluminum surfaces coming in contact with brick were painted with an alkali resisting paint as recommended by the manufacturer.

First In Milwaukee

While aluminum coping has been used elsewhere before, the Arena was the first Milwaukee building to use it. The miters were welded in the shop and installed as shown in the photo, with bolts and nailed strips.

The stainless steel door frames were of such light material that welding was difficult. This problem was solved by soldering a copper backing strip on the back side of the miters.

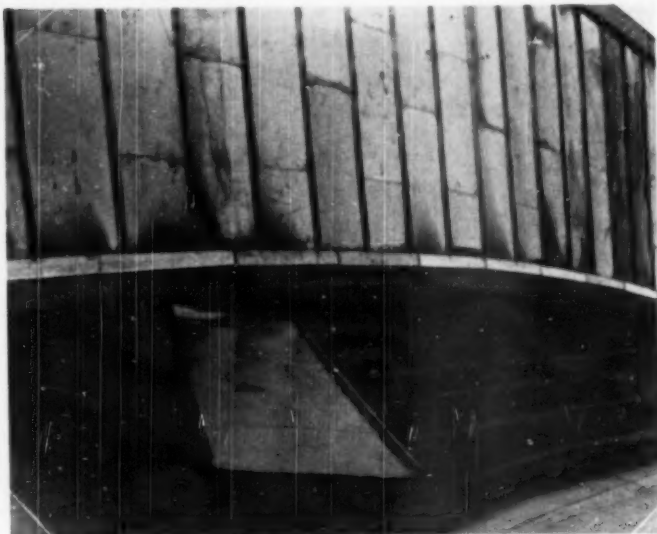


Fig. 4 Copper end wall on roof of Arena. Sheet in foreground shows how standing seam is constructed.

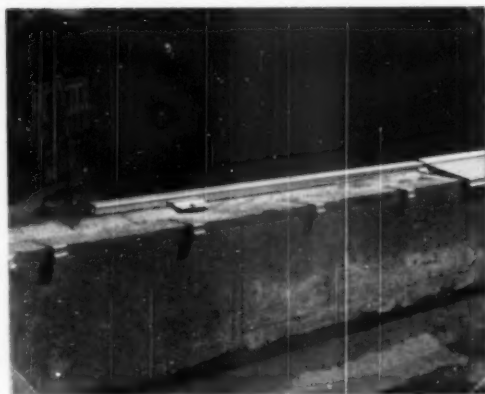


Fig. 5 The method of attaching the coping can be observed in this photo.



Fig. 1 South end of the Arena. Exhaust ducts hanging to curved steelwork were attached without scaffolding.

180 Tons Of Ductwork

L. T. BRUHNKE

Wauwatosa, Wis.

MILWAUKEE'S new Arena, first of the city's many post-war projects to be completed, was dedicated early this spring. Built at a cost of \$5 million the structure places Milwaukee on a par with other cities of comparable size in the matter of sports and convention facilities. It is connected with the Auditorium so that both buildings can be used together for large events.

Overall dimensions of the Arena are 320 by 420 ft, and the floor is 105 by 226 ft. The building is of reinforced concrete construction without a single post to obstruct the view no matter where one is sitting. Eight arches that measure 278 ft straight across and four smaller ones carry the roof which is 100 ft above the ice floor.

Downey Heating Co. was awarded the contract for installing the heating and ventilating system in the structure.

A clear picture of the size of the building can be obtained from Fig 1 above. There are 9,000 permanent seats with enough portable seats to make a total capacity of 13,500. While the building is big, there were many places where much thought and planning was necessary

to locate the ducts. Before concrete was poured, flanged metal boxes had to be furnished and installed in the forms so the grilles and ductwork could be attached. Also all openings for ductwork had to be planned before the concrete was poured. The grilles which can be seen by the spectators had to be placed symmetrically. At the same time ductwork had to avoid interference with structural members, piping and wiring. So the arena ductwork took a lot of planning ahead of time.

The usual practice on a large job of this kind is to fabricate ductwork on the job and install it as construction progresses. However, in this case blueprints were carefully studied and the large main ducts, which were located where space was not at a premium, were then made up in the shop as fill-in work, months ahead of time. Thus when work on other contracts slackened, men were put to work on Arena ducts. Then the pieces were carefully marked and stored flat. This permitted most efficient use of both men and power driven shop equipment. All the necessary fittings were also made in the shop.

No special equipment was needed for the job, except

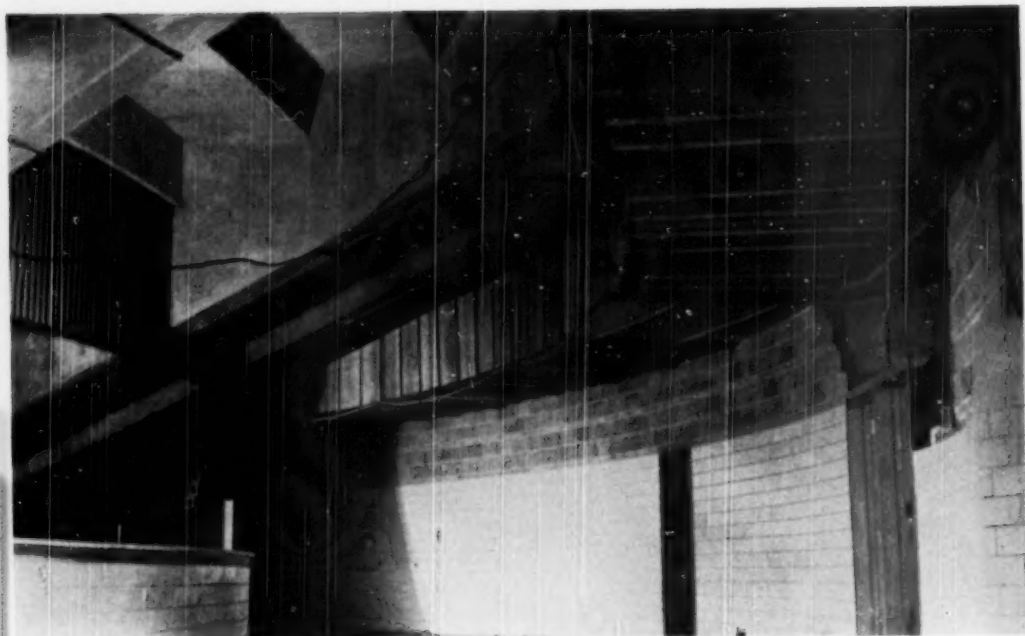


Fig. 2 The exhaust duct with a 63 ft radius could be made up ahead of time because there was plenty of room in the hall. Standing seams joined the sections.

that considerable steel scaffolding was required for the erection of certain ducts in the main arena.

To provide space for the new Arena, next to the auditorium, Milwaukee closed 5th St. from Kilbourn to State and demolished about eighteen buildings in the

block between 4th and 5th. The floor area in which cooling coils are embedded in the concrete for ice events is 85 by 200 ft.

At some events, smoking will be permitted and air can be removed from the area both from the grilles at seat



Fig. 3 Fresh air intakes can be seen on the face of the building near the coping. Exhaust outlets are located on the sides.

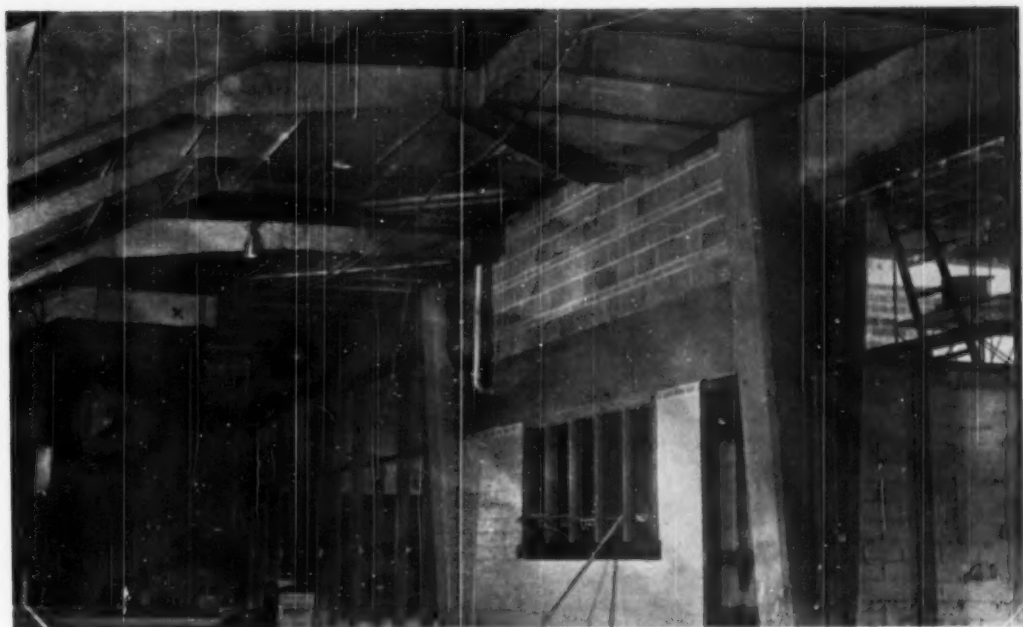


Fig. 4 The exhaust duct over the doors in the background is connected to the curved exhaust duct shown in Fig. 2

level and also from the top. The ceiling exhaust ducts can be seen in Fig. 1 and 2. Automatic dampers which can be controlled from a central point vary the percentages drawn from these two exhaust ducts. Provision is made so that when all the air is withdrawn from the top ducts, all of it is discharged outside.

The 71 by 70 in. overhead ducts had to follow the curve of the steel roof trusses but these ducts were installed without scaffolding. George Memmel, superintendent, made an accurate layout of the curvature of the bottom of the trusses. The ductwork was then cut and the angles at the end of each section determined. The duct was then assembled on the floor and the ends cut and flanges attached. Then two sections were bolted together and raised to the steelwork. They were able to bolt the flanges on one side, from the steelwork. A bosun's chair was used for bolting the other side. As it took about a half hour to raise each section, the angles on the ends had to be cut accurately — taking them down to recut them would have been expensive.

The exhaust ducts shown in Fig. 1 were fabricated on the ground and raised to position. Four 72 by 30 in. ducts were then installed between the steelwork to provide grilles to exhaust the air from the top. The inner ducts ran to nearly the center of the arena while the outer ones exhausted the air from about half way. The other end of the arena has a similar pair of exhaust ducts fixed to the steelwork. There are eight 74 by 40 in.

grilles to exhaust the air from the top of the arena.

Another interesting duct is the 63 ft radius duct which tapered from 66 by 38 in. to 66 by 27 in. This duct is shown in Fig. 3. It was fabricated at the shop ahead of time and sent to the arena knocked down. Standing seams were used to join the sections together and the sides were fastened with Pittsburgh lock seams. This is an exhaust duct taking air from the lower part of the arena.

Four Blower Rooms

A total of 20 blowers were installed. There are 4 blower rooms each containing an exhaust and a supply unit. Each supply blower furnishes 80,000 cfm at 1.25 w.g. while each exhaust blower has a capacity of 73,000 cfm at .625 w.g. These four rooms are not interconnected. For smaller crowds, two sets of blowers would be used but the grilles of the idle units would not supply or remove any air. The system is fixed so that the maximum amount of air permitted under the Wisconsin code can be re-circulated, or else all of it can be discharged outside. As mentioned, when the upper exhaust ducts are withdrawing all the air, it is all exhausted outside.

Heat for the building is furnished by the central steam heating plant of the Wisconsin Electric Power Co.

A pneumatic temperature control system was installed to control the temperature in the main arena and exhibition halls. All thermostats can be manually changed



Fig. 5 Even fittings and offsets like the ones above were made ahead of time and stored.

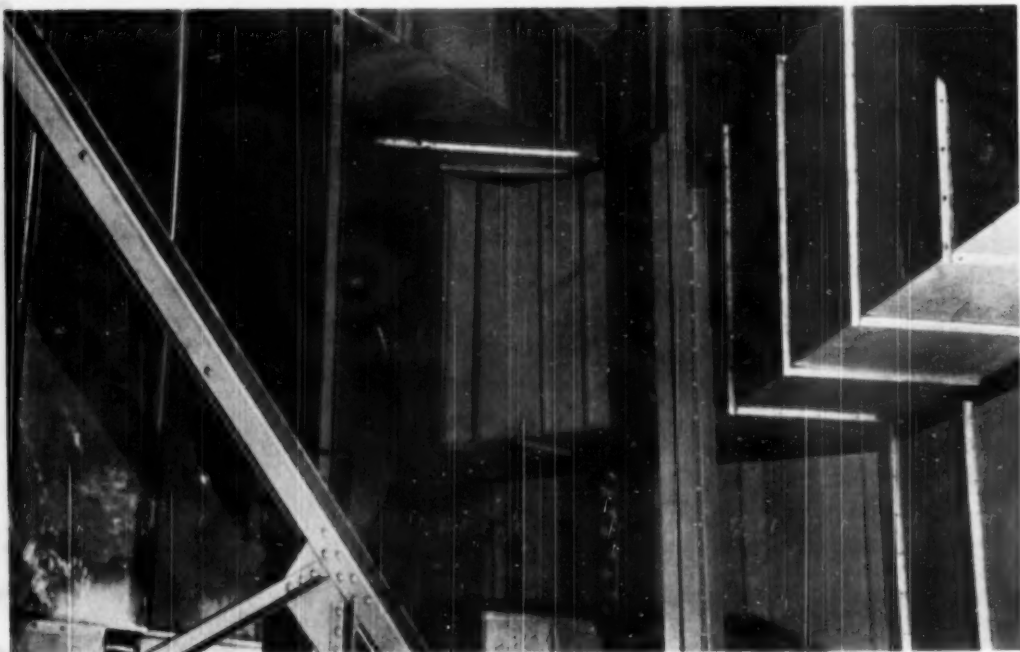


Fig. 6 A view of one of the blower rooms. This picture was taken from the housing of the main supply blower.

not cause an accident. He did not use it in the walls however. No estimate of the cost of using this tool was given, but it is fast and no drilling of the angle iron is required.

Designers

Eschweiler and Eschweiler of Milwaukee were the architects for the sports arena and the heating and ventilating system was designed by Joseph H. Volk, a consulting heating and ventilating engineer, also of Milwaukee.

The heating and ventilating contract awarded to Downey amounted to \$310,000. According to N. O. McCormick, secretary and treasurer of Downey, they employed 85 men for the arena job. The crew varied

from occupied to unoccupied temperatures by manual control from the central control room panel. However, all thermostats are equipped with a button to put them into individual operation at any time. They are connected so that the next manual operation from the central panel will restore the original cycle.

A powder operated tool was used to nail angle irons to the concrete floor. This is a device which uses the explosive power of a small cartridge to drive a special nail through solid angle iron. The foreman did the nailing himself to make sure that unfamiliarity with it might

from time to time and he did not have any figures as to the total number of man hours.

Downey Heating Co. was established in 1863. They are equipped to handle any size heating, process piping, ventilating, exhaust and air conditioning job. They sponsor a national news commentator over WMAW at 6:15 p.m. on Saturdays. Besides mentioning Downey Heating, they also have a short comment on one of their clients. Thus, if they have done work for a college, they will give them some publicity. They also donate their time for various fund drives.

Steel And The Future

One of the most forceful spokesman of the steel industry, Benjamin Fairless addressed a recent convention of purchasing agents on the future of steel. His words are of such general interest that we print them here.

AT present there is a shortage of steel. In spite of everything we have done and can do, we are not able today to turn out all of the steel that everyone wants as fast as they want it.

Seldom in my lifetime, however, have I known any fact to be twisted, distorted, and lied about as that one has, by some of our socialist-minded critics.

These critics base their attack on the logical, but deceptive premise, that it is the obligation of the industry to supply all the steel that the American people may ever want at any time under any circumstances. From there they jump happily to the conclusion that the present steel shortage proves beyond any shadow of a doubt that the industry has not lived up to its national responsibilities, and that its management can no longer be left safely in private hands.

Now, their premise is correct, of course, in theory; but their conclusion is ridiculous.

Certainly it is the responsibility, and the desire, of any well-managed industry to take care of its customers. And it is the obligation of any bank to pay all of its depositors whenever they want their money. But if all of the customers come in at once and demand all their money at once, they simply can't get it. No matter how sound the bank may be, it will have to delay payment until the necessary supply of cash can be assembled. Now, does that prove the bank isn't well-managed? Has it failed to live up to its public responsibilities?

Well, that's how it is with steel today. Let the government announce that it is planning to ration meat, or butter or sugar, and almost within the twinkling of an eye, meat and butter and sugar disappear entirely from the shelves and show-cases at your corner grocery. And when the government finds it necessary to allocate, or ration steel — as it has announced that it will

out over several years are suddenly crowded into the space of a few months. But the fact that these buyers now face delay in getting all the steel they want, is certainly no proof that the industry has failed to live up to its public responsibilities, or that it has misjudged the real needs of the American people.

Big Year 1943

Government records show that American industries as a whole, the manufacturers of everything from hairpins to locomotives, turned out more goods in 1943 than in any other year before or since. Not even today is our nation's total industrial production as high as it was then. And yet, today, the steel industry is pouring nearly 12 million more tons of ingots than it did then. That means that our nation today is using 100 million tons of steel to produce a smaller quantity of goods than it manufactured out of only 88 million tons, seven years ago. Now what's happened to the other 12 million tons?

Well, it is probably, for one thing, that manufacturers are not using steel as efficiently and as sparingly now as they did in 1943. But there could, of course, be another explanation. It is just barely possible, for instance, that some of the customers who are buying steel from us today are following the example of the woman who went into a liquor store, ordered ten cases of scotch, and explained to the clerk that she wanted to build up her inventories before a lot of greedy people started hoarding.



Benjamin F. Fairless
U. S. Steel Corp.

— a run on steel develops overnight.

People who think they may need a new car, a new ice box, or a new stove within the coming year or two, decide to buy it now for fear the government will not permit them to get it later. For the same reason, people who had planned to build, at some future time, a new building or a new factory, or to buy new machinery and equipment, decide suddenly to get these things now, while the getting is good. And so the orders that would normally be spread

That might explain a lot, for certainly the telescoping of consumer demand, and the replenishment of inventories are two primary reasons for our present difficulties. But there is a third, and equally important, reason which cannot be ignored in any honest and complete discussion of the current shortage.

And that is the simple, undeniable fact that strikes have cost the American people 29 million tons of steel production since VJ-Day.

I state that merely as a fact, and not as an accusation. I point the finger of blame at no one; for with all my heart and soul I believe one thing: I believe that any man who, in this critical hour, impugns the motives, the patriotism and the high purpose of any group of loyal Americans, is playing the Kremlin's dirty game and that is not for me!

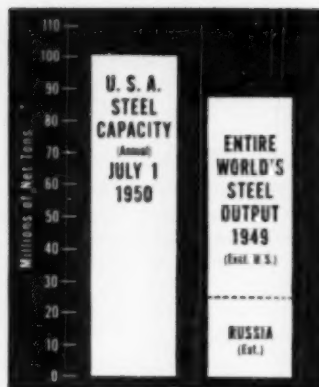
Some men will say those strikes occurred because management was stubborn and unyielding. Others may say that labor was willful and headstrong. Conceivably both could be right. As an interested party, I'm not qualified to judge.

America First

But of this thing I am sure: that if the patriotic men of steel — the men who make it and the men who manage it — are fully determined to put America's security above all else, there is no problem they will ever face that cannot, and will not, be peaceably settled, with patience, with forbearance, and with reason.

Let's get down to the simple, dispassionate facts about our steel supply, and see if we can't bring this picture into some kind of realistic perspective by asking ourselves three questions: What has the steel industry actually done, over the years, to fulfill its responsibilities to the American people? How serious is the present shortage in terms of military and civilian needs? And what is the steel industry doing to overcome that shortage?

Now the answer to the first question, about what we have done to live up to our national responsibilities, is all to be found in the official record.



Steel Facts

Americans, of course, don't like to take second place in any league, so they expect their steel industry to be bigger and more productive than the steel industry of any other nation on earth. Well it is; but what many Americans do not know, I suspect, is that their own steel industry is bigger than those of all the other nations on earth, put together!

Yes, the fact is that the American steel industry today can match the output of every foreign steel plant in the world, ton for ton, and still have 14 million tons left over. It turns out pretty nearly twice as much steel as all the other countries outside the Iron Curtain.

So I think it is clear that the American steel industry has more than fulfilled what is probably its first responsibility to the nation — the obligation to outproduce any possible combination of aggressors. But what of our domestic needs? How have those been met?

All during this twentieth century, the steel industry has maintained, year in and year out, an average productive capacity nearly 50 per cent greater than the demands our nation has made upon it. That means that, over these years on the average, nearly one-third of all the steel-making facilities in America have stood idle.

Yet, in spite of this, it has continued to expand steadily, in every decade. Even in the depths of the depression when only half our steel capacity was being used and when

we couldn't have sold another pound of the stuff if we'd taken cigar store coupons in trade!

In fifty years, the population of the United States has only doubled; but America's steel production has increased nearly sevenfold. And the most dramatic part of that increase has come in the past eleven years.

Since 1939, when Hitler's armies invaded Poland and World War II began, America has expanded its steel production by more than 47 million tons. That is an increase of 90 per cent in these eleven years — an increase six times as big as the growth of our population.

Never once of course, not even in the darkest days of World War II, did any military project ever suffer for lack of steel. On the contrary, in the peak years of arms production, after every direct military need had been fully met more than 50 per cent of our total steel production was still left for essential civilian requirements and for lend-lease export to foreign nations — including Russia.

No other nation in the world could have matched that record. It is a record that stands as a glorious tribute to the men who make steel and the men who built steel in America.

Next we come to the question of our present day steel supply and the probable demands that will be made upon it.

Demand is Heavy

Now the first fact we have to recognize here, it seems to me, is that practically all the steel we can make today is being shipped to civilian customers as fast as we can make it. Military demands thus far have been negligible, but they will increase rapidly in the coming months and will naturally have first claim on our entire steel supply.

So it is obvious that whatever the military and the other steel demands may be, new steel-making facilities are going to have to be built to take care of them. It is equally obvious that — until those new facilities are built — the government's needs will have to be met out of existing civilian supplies.

How much civilian steel will be left depends, therefore, on how much military steel our government must take. And on that question, I regret to say, there simply are no firm, established facts to guide us.

Personally, I have consulted with just about everybody except the fortune-tellers, and I don't think anybody knows exactly how much steel our defense program will require. I don't see how anyone can be expected to know, moreover, until we find out what devilry that gang in Moscow is planning next. But when it comes to reading the Russian mind, I'm strictly a second-guesser myself, so if the experts are a little hazy about their estimates, what right have I to complain?

The only official information we have on the subject is now several weeks old and comes from the house appropriations subcommittee where Secretary Johnson and other military experts testified. At that time, they thought that our direct defense needs up to next July 1st would run to only 4 million tons.

But since then many things have happened and my own inquiries, recently, lead me to believe that this estimate is low. Certainly, in the light of our experience at the outset of World War II, I think we must assume, for safety's sake, that military demands might go as high as three times that figure by next July 1st; so let's be pessimistic about it and put the government down for 12 million tons.

That would mean that we shall have to cut back our civilian consumption by about one-eighth as an over-all proposition, but unfortunately it isn't as simple as that. And it isn't an over-all proposition.

Flat Stock

Our greatest difficulty today lies in the field of light, flat-rolled products, and it is right here in this field, where we were already struggling to keep our heads above water, that much of the military demand is going to fall.

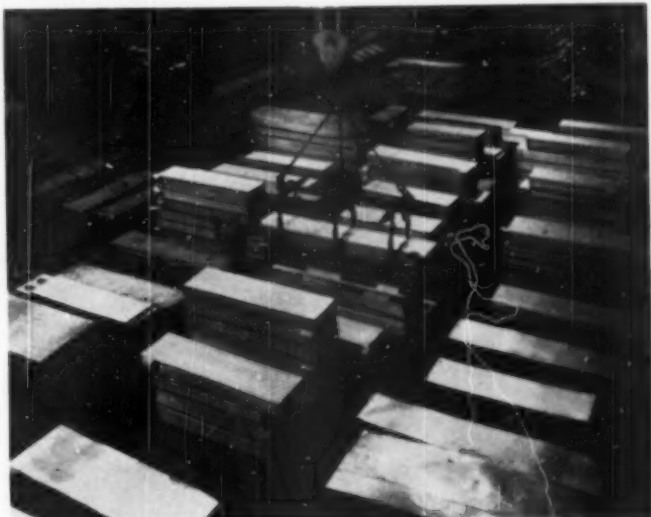
The armed forces will need landing craft, tanks, more trucks and

jeeps, blitz cans, field ranges, aircraft landing mats, lockers, tin cans for food, and a lot of other things that will take large quantities of flat-rolled steel. Beyond that we are going to have to build more oil pipe lines, more freight cars and more grain-storage bins. And when they get through, our supply of flat-rolled products is going to look mighty flat indeed.

So there is the crux of our problem. While similar pressures are beginning to develop in other prod-

of our security — is not impaired but continues to grow."

That statement by the President, gentlemen, makes a whole lot of sense. If our economy is to remain strong, and if it is to continue to grow, it must not be starved at home to provide the steel we shall need abroad. So, clearly, it is up to the industry to build, as rapidly as it can, the capacity required to meet our defense needs with the least possible disturbance to our necessary civilian demands.



Shipments of cold rolled sheets in July totaled more than 803,000 tons.

uct lines, it is here, especially, that the first impact of our national defense program is going to cut a large segment from our civilian supply of sheets, plates, and tin plate. Just how large a segment that will be, nobody knows. I have been very much impressed, however, by a statement which President Truman recently sent to the Congress. In that statement he said this:

"We must continue to recognize that our strength is not to be measured in military terms alone. Our power to join in a common defense of peace rests fundamentally on the productive capacity and energies of our people. In all that we do, therefore, we must make sure that the economic strength — which is at the base

All of which brings us to our third and final question: What is the steel industry doing about it, and what can it do?

Here again, the answer is simple and factual: we are suddenly confronted by civilian demands that normally would have been spared out over several years. At the same time we are facing a flood of defense and military orders that might never have been forthcoming at all under other, and happier, circumstances. And just as all these demands have been compressed suddenly into one tremendous package, so the steel industry is now compressing into the space of a few months a construction program that

(Please turn to page 98)

Pattern Development For

A-Type Ventilator (II)

HUGH B. REID
Detroit, Mich.

AN "A" type ventilator or any roof ventilator is an advertisement for your shop. It is up where everyone can see it, so it is imperative that the design and workmanship should be of the highest standard. This is a second article on the A type ventilator showing a slight difference in design that will do much to improve the appearance without detracting from the performance of the ventilator.

The cost will be slightly higher owing to the added work required in pattern development and fabrication but the improvement in appearance should more than compensate for this slight addition in cost.

From the simplified drawing, the following should be noted:

- a) That all pipes are equal in diameter.
- b) That all intersecting lines are straight lines drawn from the diameter line to the intersection point of the center lines.
- c) That the top and bottom lines of Section 1 are parallel to Line A of Section 3. This will convert the shapes from a round to an oval, thus increasing the area.

Following is a step-by-step solution:

Make the simplified method drawing by the following steps:

- a) Draw the center line. Measure out $1\frac{1}{2}$ in. and up $11\frac{1}{2}$ in. and draw the vertical pipe outline.
- b) From the $11\frac{1}{2}$ in. line measure 1 in. and draw lines L and D representing the diameter of the horizontal pipe.
- c) From the intersection points of lines W and L measure out $1\frac{1}{2}$ in. and through the point draw a line making an angle of $22\frac{1}{2}$ deg with the vertical pipe.
- d) From the $22\frac{1}{2}$ deg line measure 1 in. and draw the outline of the angular pipe as shown.
- e) From the intersection centerline points of the horizontal and the vertical pipes as center, draw a half circle and divide the half circle into six (6) equal spaces.
- f) Through the equally spaced points draw horizontal lines as shown by Lines D, E, F, G, H, K, L.

- g) Below the base of the angular section marked 1 draw the line RS. This line must be parallel to line XY and be on the same plane as, and equal to the pipe diameter as indicated by the arrows.
- h) From a center point on line RS draw a half circle the radius of which is equal to the pipe radius.
- i) Divide the half circle into 6 equal spaces and from the equally spaced points extend lines through the pipe section, the lines being parallel to the center line.
- k) Number the lines 1 through 14 above and below line XY as shown. Note that line XY is drawn through the center line intersection point of pipe sections 1 and 2.

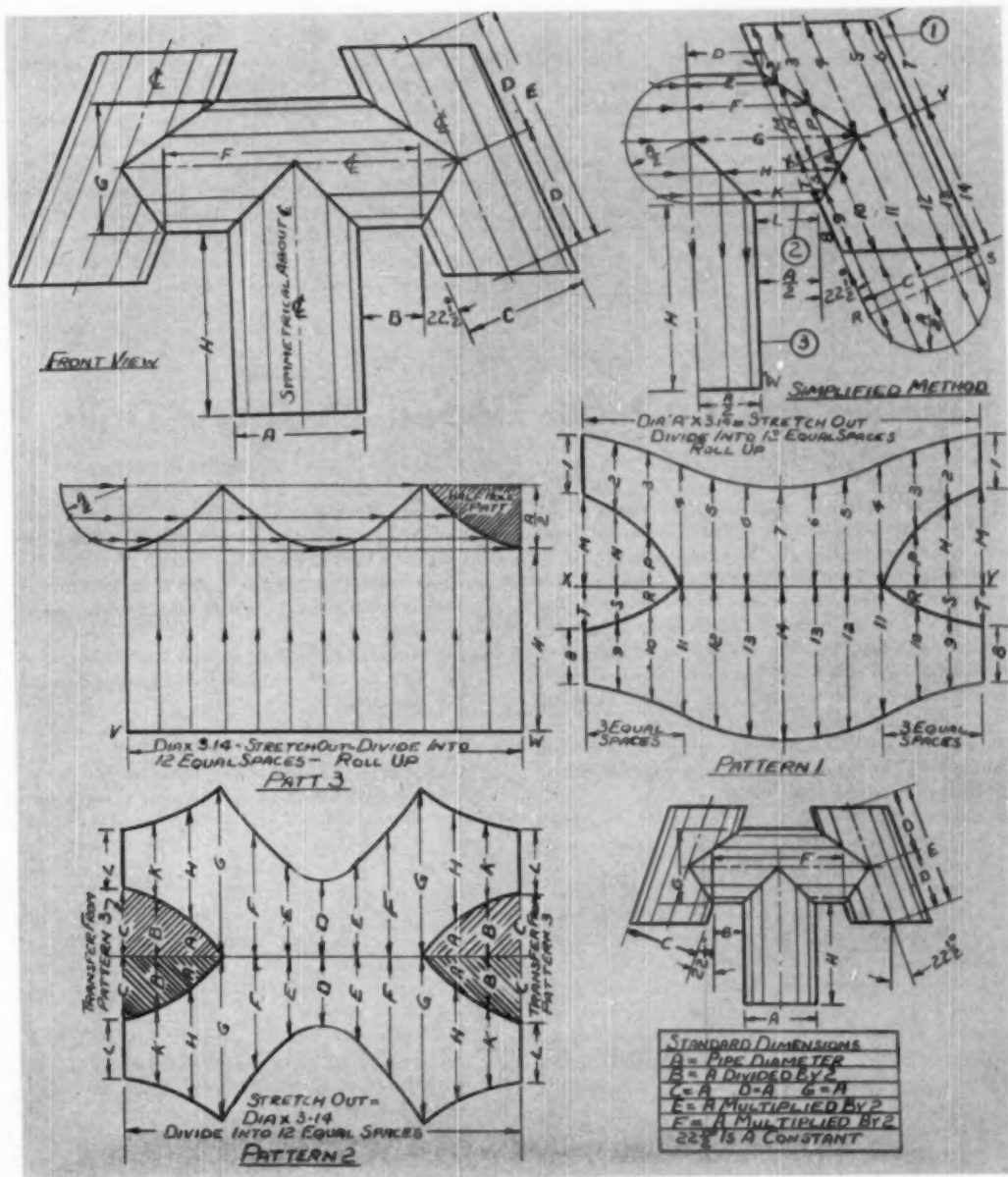
To lay out the pattern for Section 3:

- a) Draw the stretch-out line the length of which is $3.14 \times$ diameter of the pipe and marked VW.
- b) Divide the circumference line into 12 equal spaces, and through the equally spaced points draw lines perpendicular to line VW.
- c) From point V on line VW, measure out $H + \frac{A}{2}$ and draw a 90 deg arc, the radius of which will be equal to the pipe radius.
- d) Divide the 90 deg arc into 3 equal spaces and from the points draw horizontal lines to intersect the perpendicular lines V to W.
- e) Draw the pattern outline.

To lay out the pattern for Section 2:

- a) Draw the line marked CL the circumference of which is pipe diameter $\times 3.14$.
- b) Divide the line into 12 equal spaces and through the equally spaced points draw lines perpendicular to and extending on both sides of the center line.
- c) With a compass, step off distance D on the simplified method drawing and transfer this distance to both sides of the center line of the pattern stretch out.
- d) The lines E, F, G, H, K, L, will be transferred in their consecutive order from the simplified method drawing

Sheet Metal Pattern



to the pattern stretch-out.

- c) The true shape of the hole cut-out is transferred from Pattern 3 or the distances *A, B, C* can be stepped off the drawing and measured on the corresponding lines of the pattern layout.

To lay out angle Section 1.

- a) Lay out the stretch-out line marked *XY*, the length of which is pipe diameter multiplied by 3.14.
- b) Divide the stretch-out line into 12 equal spaces and through the points draw lines perpendicular to and extending on both sides of the line.
- c) With a compass step off distance *I4* on the simplified method drawing and transfer it to the corresponding line on the layout.
- d) Next step off distance *7* on the simplified drawing and transfer to the corresponding line on the layout.
- e) Step off distances *I3* and *6* above and below *XY* line on the simplified drawing and transfer to the corresponding lines of the layout working above and below the lines as shown.

- f) The distances *12, 5, 11, 4* will be transferred in their consecutive order as shown.

- g) Working from line *XY*, distances *R, S, T*, will be transferred below the line and distances *P, N, M*, will be transferred from the simplified drawing to the corresponding lines on the layout and above line *XY*.

- h) Distances *3, 2, 1* and *10, 9, 8* can be measured as shown, or the combined distances *R + 10, S + 9, T + 8*, and *P + 3, N + 2, M + 1* can be measured. If the latter is used, then all distances will be measured from line *XY*. This will be more accurate and will lessen the chance of error.

Make necessary allowance for seams and joints. Cut out patterns and roll to the required shape.

A variable standard dimension table has been presented; it will be noted that *H* dimension has been omitted. Standardization of this length would only be applicable to a production job. In all custom work, length *H* would be governed by field conditions.

Sharpening Carbide Tipped Masonry Drills

A NEW type of carbide tipped masonry drill has a flute made of piano wire wound in a low helix around the steel shank. This flute helps to solve one of the main problems in drilling masonry, brick, tile, etc. It removes the dust as fast as it is formed (Fig. 1). Because of this, there seems to be no tendency for dust to pack in the holes. The drill need not be withdrawn to remove dust, and drill life is increased. These drills are currently being used to drill most ordinary types of floor and wall materials such as concrete, brick, tile, marble, slate, etc., as well as copper, brass, and other soft metals. The following data will be found useful in getting the most out of these drills:

- 1) This new drill fits into any portable drill, drill press, hand brace, or rotary-impact drill. Hammer type percussion equipment is not recommended.
- 2) Normal speeds of electric portable drills are satisfactory for drilling the usual masonry materials and soft metals. Lower speeds should be used when drilling extremely hard or abrasive materials.
- 3) The drill is easier to operate. Apply as much pressure as you want, but the amount of pressure required to keep the drill moving in most materials is quite light, due to absence of dust packing in the hole.
- 4) Do not use a coolant with the drill.
- 5) Break any glazes or extremely hard pebbles with a center punch or star drill. This saves time and prevents premature dulling of the carbide blade.
- 6) Although carbide drills have no trouble cutting rein-

forcing rods, be careful when drilling reinforced concrete. A drill wedged beside a reinforcing bar may break the carbide blade.

- 7) Keep drill sharp. When drill has a 1/64 in. or greater flat on the cutting edge (Fig. 2) it is time to sharpen it.
- 8) For faster, easier drilling of holes 1 in. or larger, in diameter, drill a 1/2 in. pilot hole first and then the full sized hole.

How to sharpen

To sharpen a dull drill, use a silicon carbide C100-18-V or C30-18-V wheel on a pedestal or a bench type grinder. If you are on a job, mount a portable drill on a drill stand and insert a wheel arbor with a small silicon carbide wheel into the chuck.

Then sharpen the drill like this:

- 1) Bring drill against side of grinding wheel at a 15 deg angle (Fig. 3). These drills have a 15 deg angle when new and this is the angle to grind when sharpening. Unless this angle is maintained, drill will not cut properly.
- 2) Using moderate pressure, keep drill moving back and forth across wheel to avoid overheating (Fig. 4). Allow drill to cool gradually. Never dip heated drill into liquids.
- 3) Keep the two cutting edges of the drill of equal length to prevent drill from cutting oversize (Fig. 5).
- 4) Repeated sharpenings of drill will reduce clearance between carbide tip and steel shank. Since carbide

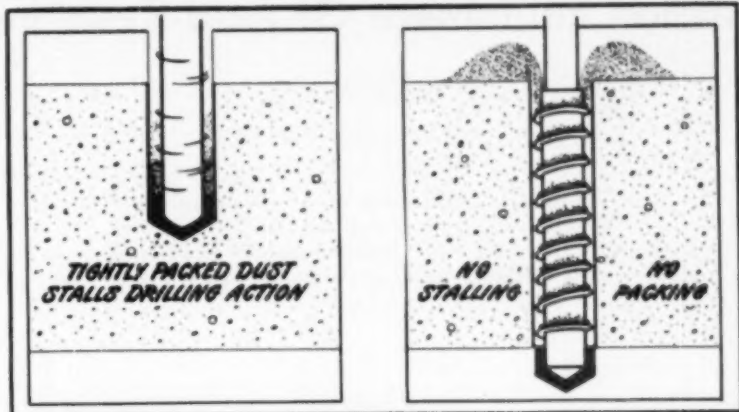


FIG. 1

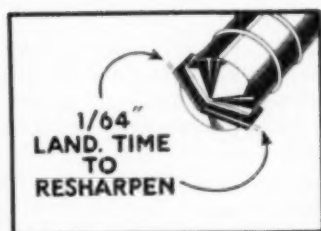


FIG. 2

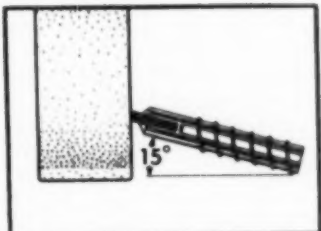


FIG. 3

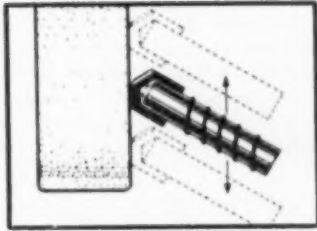


FIG. 4

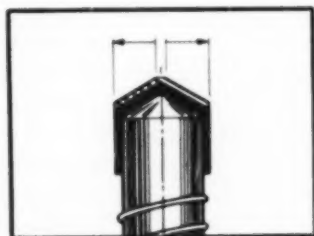


FIG. 5

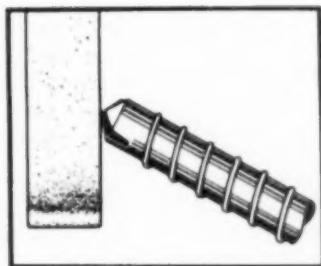


FIG. 6

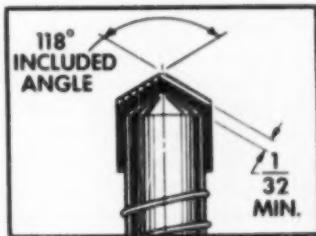


FIG. 7

tip must project at least $1/32$ in. beyond steel shank to cut properly, grind away steel from behind carbide tip so that steel is nowhere closer than $1/32$ in. to the working surface of the carbide blank (Fig. 6).

Steel shanks can be backed off free hand at about 35 deg.

5) A correctly sharpened masonry drill is shown in (Fig. 7).

Distillation Equipment Of Acid-Resisting Metal

ERNEST E. ZIDECK

Sheet Metal Consulting Engineer

Practical applications of acid-resisting sheet metals in industrial sheet metal work are many and varied. The installations described here fill a definite need in a particular type of plant.

IN CHEMICAL plants, distilleries, and breweries the principal distilling apparatus consists of furnaces, retorts, vats, and huge tanks constructed of materials other than sheet metal. However there is a vast amount of equipment employed made of acid-resisting sheet metal such as copper, stainless steel, nickel, and newer alloys. In the fumes-to-liquid reduction processes particularly, an advanced method which utilizes sheet metal hoods and ductwork has been introduced. This method is the subject of the present article.

Fume Production

Whether cereals or other matter are boiled in water or chemicals are mixed in tanks to react and drive off the distillate, a boiling takes place which produces fumes. Grains distilled for alcohol are commonly boiled in tanks or vats closed tightly. The fumes rising from the boiling matter pass into tubes for condensation. But these fumes are carried upward by steam from the boiling matter pass into tubes for condensation. But these fumes are carried upward by steam from the boiling water which also condenses so that various other treatment is necessary to separate the distillate. Where the reduction is by admixed chemicals, the process also results in fumes which, if exhausted into the outside air, waste valuable substance. Pollution of the outside air by external exhausting of these fumes is a condition which a plant situated in a residential or business section of the community must avoid.

In the accompanying drawings, Fig. 1 depicts a battery of sheet metal hoods *A-A* with individual stacks *B-B*, gutters in the hoods *E-E* and valves *F-F* in the gutters. The dotted lines in the structure indicate gutter partitions shown in Fig. 3. The partition *G* has the gutter on both sides. The two ends of the structure *H-H* have gutter on the inside only. Connections from *B* to *D* are shown in Fig. 4. The bottom part of hood *A* with connection *D* is

shown in Fig. 5. The construction of *A* is here shown more clearly than in Fig. 1, with the gutter *E-E* incorporated. The gutters in *A-A* and in partitions and ends *G-H* have the function of trapping condensation which flows out through the valves *F-F*.

To understand the function of the apparatus depicted in Fig. 4, it is necessary to view the arrangement of kettles *I-I* in relation to the hood *A* suspended over them. It will be seen that the hood is considerably larger than the kettle. The distance from kettle to hood is about 3 ft., there will be no interference with loading the kettle or emptying it. This distance from the upper rim of the kettle to the bottom of the hood allows fumes rising from the kettle to spread out. The large size of the hood prevents the fumes from escaping sideways. While an individual hood of this design functions to catch all fumes, smells, and affected air from the process going on in one individual kettle and its surroundings, the hoods ranged side by side as shown in Fig. 1 and Fig. 2 each receive the emanations from only one kettle. Each kettle may hold different materials and send forth different fumes.

Types of Fumes

Certain fumes are lighter than others. But all fumes are carried upward either by steam from boiling water or by the heated air resulting from the heat-producing action of the chemicals. The lighter fumes will be carried as high as the steam will rise before condensing, or as the heated air will rise before cooling. The heavier fumes will not rise as readily and will tend to spread sideways, forced up by the heat from the kettle, then sink down to the floor. It would be no problem to capture fumes by a high velocity exhaust system, lifting the fumes and carrying them to the outside of the building. But here the problem is different: the fumes must be condensed into a liquid or distillate. The problem then, is to catch the fumes as they rise from the kettle and

DISTILLING APPARATUS

Fig. 1 Acid-Resistant Sheet Metal Structure

*For connections
see Fig. 4*

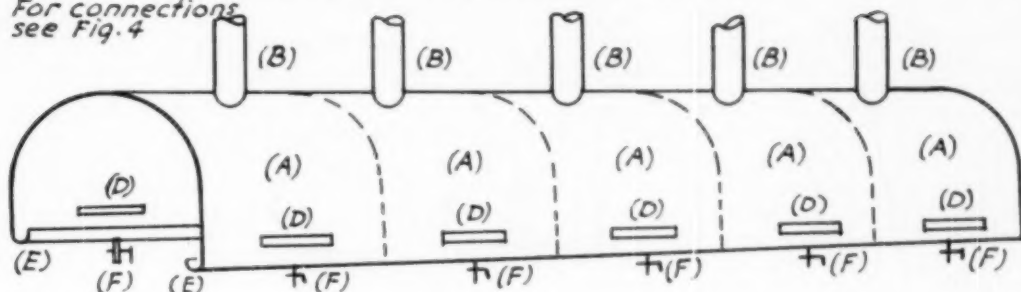


Fig. 2 Plan View of Tanks and "Guttered" Hoods

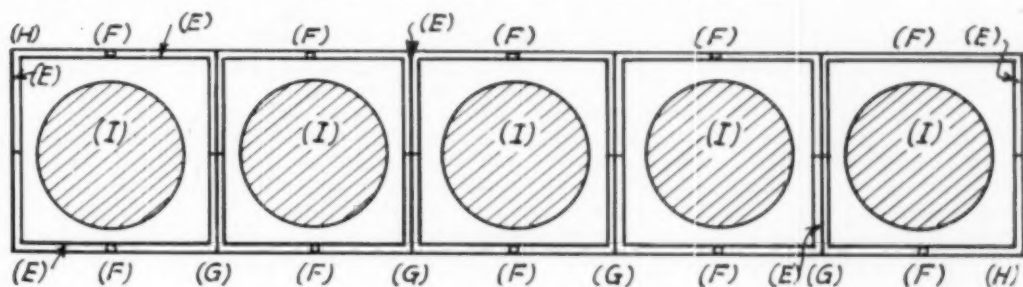


Fig. 3 Partition and End

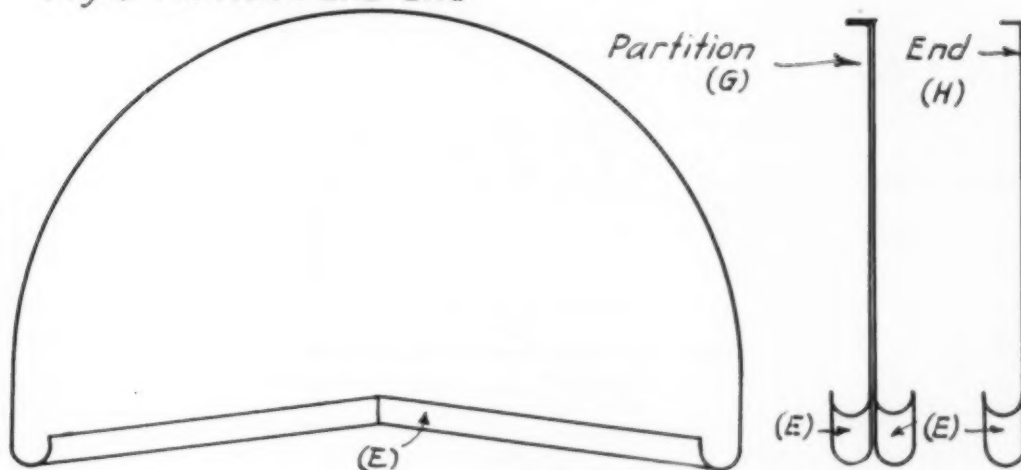


Fig.4 Section Across One Unit

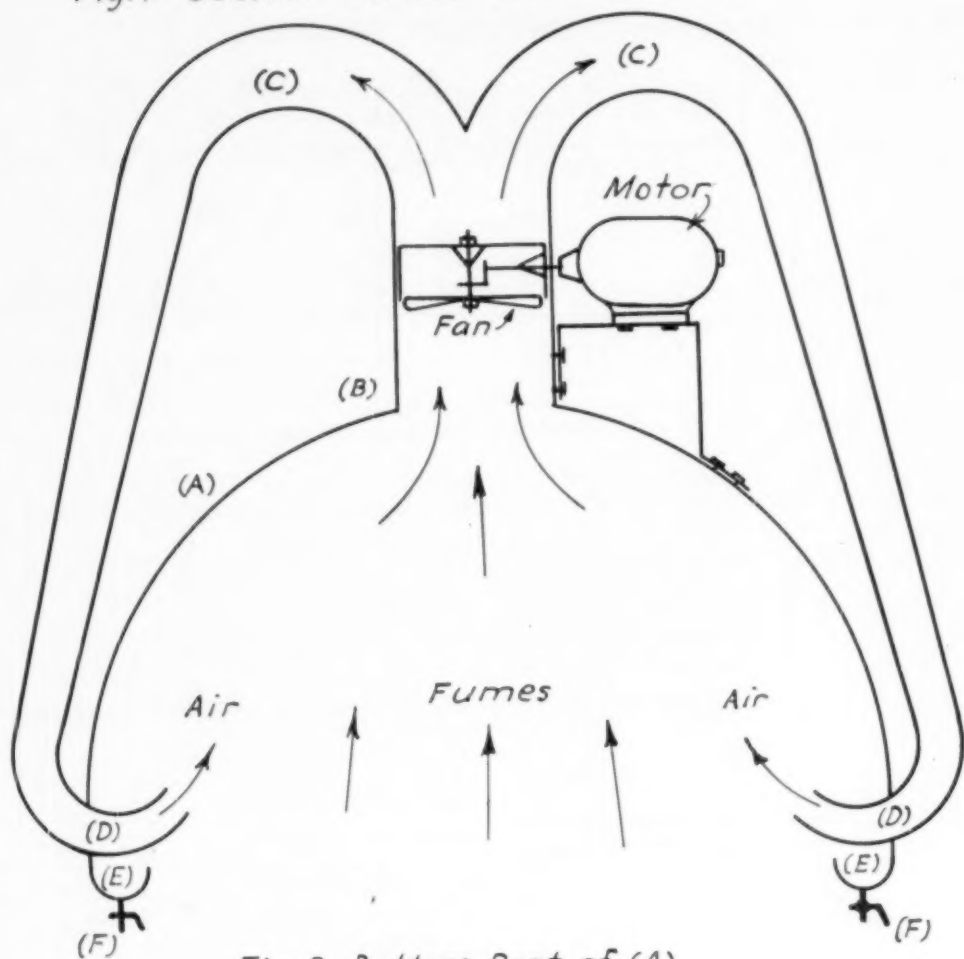
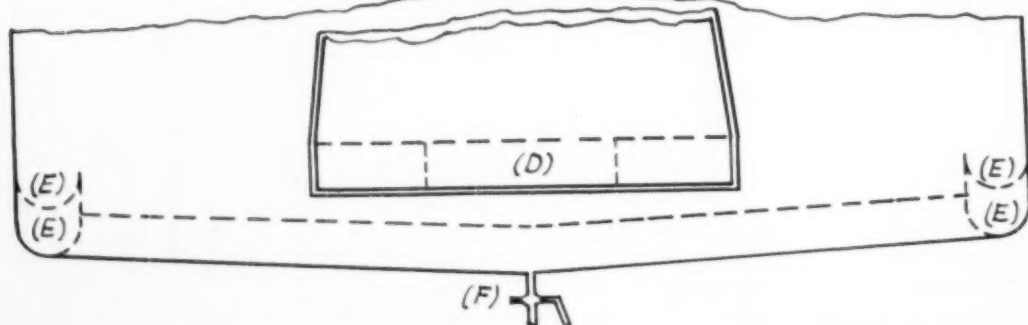


Fig.5 Bottom Part of (A)



convert them into liquid for further treatment.

Accordingly, the system depicted in section in Fig. 4 comprises the radial hood *A* and two ends to the hood *H-H* with their bottom terminals provided with the gutters *E* sloping towards the outlets *F*. The stack *B* in the top of the hood divides into two elbowing branches *C-C* which taper to the width *D* (Fig. 5) and reenter the hood near the bottom. An adjustable velocity fan is mounted in stack *B* for continuous circulation of air from the top to the bottom of *A*. The performance is obvious: 1) The fan in *B* produces a vacuum in the upper inside of the hood which is filled with air from the lower part of the structure. 2) The air streaming upward makes room under the hood for fumes rising from the kettle. 3) The air streaming out of the two flattened out ducts *D-D* carries with it the heavier fumes lingering above the kettle. 4) Condensation within the hood forms into drops on the metal of *A-H* flowing down into the gutters *E-E*. 5) Condensation within the ducts from *C* to *D* drips into the gutters *E-E* and flows to the outlets *F-F*. This condensation is then received by *F-F* into tightly sealed containers for further processing.

The outlets of *D-D* are provided with partitions shaped to fan the air laterally in part so that the air spreads within the hood and also strikes the walls of the hood ends *H-H*. The streams from *D-D* create a drawing force for the air rising from above the kettle so that there are two agents active in lifting the emanations from and around the kettle: 1) the suction of the fan in *B*, and 2) the two air streams from *D-D*. The function of the combination shown in Fig. 4 is to absorb under the hood all the air in the vicinity of the kettle *I*. It must circulate this air, continually through the interior of the hood and ductwork *B-C-D* until the fumes carried by the air condense into liquid. The hood is constructed so that no air, steam, smells, or any other substance from the process is allowed to escape and contaminate the air in the laboratory or room. The function of the air circulating through *A-B-C-D* is to lift and carry the fumes with it. The height of the stack *B* is generally determined by the time it takes for the fumes to condense. In some cases, a running cold water pipe is brought in contact with the under side of *D* to speed up condensation.

Other Applications

Of particular interest to sheet metal shops doing this kind of work is the fact that the idea underlying the combination, Fig. 4, might be profitably applied to any other system of reducing fumes to liquid. It may also be applied to air filtration where the air is admixed with vapors or substances either liquefying or too heavy to be carried by exhaust air, such as cooking greases. While the system of continuous air circulation carrying the fumes until they condense or are extracted from the air by the process is easily understood, the sheet metal structure and the ductwork in connection will obviously differ in each case. The natural spread of the fumes from the point of source must be considered as well as their in-

herent weight and the rapidity of condensation. Since most fumes contain acids, acid-resistant metals should be chosen for this work. It is also evident that a conventional angular hood can be substituted without impairing the system's efficiency and that the stack *B* can be divided into four branches instead of only the two shown.

The arrangement of multiple hoods side by side shown in Figs. 1 and 2 has another purpose than the obvious one of conserving metal by using the partition *G* instead of closing each hood unit by two ends *H*. The principal object here is to eliminate openings between the hoods for air passage between them which would attract emanations from the kettles, carry them upward, and spread them through the room. The processes in the kettles heat up the air in the area between them, and the heated air would naturally create drafts if there were openings left between the hoods. These openings would be equivalent to flues drawing the air upward. This is prevented by connecting the hoods as shown in Fig. 1. Individual hoods should be installed far apart and away from walls so that no imitation flues are created for air currents.

Several Leads

Where an individual hood of this design is constructed the stack *B* is divided into four leads *D*, one entering each of the four sides of the hood. This hood comprises four sides, Fig. 5, tapering upward to the stack *B*. Instead of individual valves *F* in each of the four sides, sloping pipe connections are used to bring the liquid to the most accessible or preferred outlet by one valve *F*. This piping is of acid-resistant metal, increasing in size towards its termination in *F*. Caps or plugs are used in the corner elbows for access into the pipes for cleaning the interiors. The flattened duct *D* is partitioned vertically, Fig. 5, and the partitions are bent radially to guide air from *D* laterally, as mentioned above. For practical purposes the flattening of *D* cannot exceed the proportion of air volume received into the elbow *C*. If this elbow is 5 by 10 in. the termination *D* must be no less than 2 by 25 in. to carry the air volume of *C* without compressing the air in *D* and causing its force to carry along the condensation. This condensation must gather in the bottom of the elbow *D* and drip through holes provided in it into the underlying gutter *E*. The motor velocity is regulated so that there is enough force in the fanned air to lift the fumes into *B* without affecting condensation and circulating them repeatedly through the hood.

Another version of this distilling structure is one resembling the long hood in Fig. 1 placed over one long tank in which cereals are boiled. The hood overhangs the tank by 2 ft. at each side and end, about 3 ft. up from the rim of the tank. The stack *B* is placed in the middle of the long hood and the branches *C* enter the two ends *H*, each end provided with the outlet *F*. Here the two opposite air streams from *D* carry the fumes rising from the tank to the centrally located stack. The air travel is longer through *C-D* so that liquefaction of the fumes from the tank occurs without artificial cooling.

(Continued from page 39)

normally would have been spread out over many years to come.

Fortunately the steel industry has never stopped planning for the future — for its future and for America's future. And so these plans, plans that only a short time ago were hardly more than the blueprint of a distant dream, are already beginning to spring to life in the form of steel buildings, flaming furnaces and roaring mills — ready to provide our armed forces with whatever may be necessary for our national survival.

Within a matter of days after the Korean invasion began, the American steel industry announced the commencement of a truly enormous program of expansion. In the next 27 months the industry as a whole will have added a total of 5 million tons to our present ingot capacity; and one-third of that entire increase will be completed within the next 15 months by the United States Steel Company alone.

Now the sudden telescoping of all this construction into this almost incredibly short space of time naturally imposes a tremendous burden, not only upon the energies, but upon the finances of the entire industry. And yet, despite that fact, more plans are being rushed in order that more plants can be built as our defense requires them.

Well, I wish I could tell you everything you want to know, but I can't at this moment. How large our Pennsylvania plant will be, and what kinds and quantities of finished products will be made there, will depend to a large extent upon the military needs of our government. So until we know what is necessary to meet the requirements of our armed forces, I can only tell you what you have already read: that almost immediately after the outbreak of war in Korea — and as soon as it became apparent that our national defense would require the building of new steel capacity — we decided to erect an integrated steel mill here on the eastern seaboard, with a minimum capacity large

enough to permit high efficiency of operation. Beyond that, however, I think it would be safe to assume that ultimately, this plant will also be large enough to produce whatever steel our government may want us to produce in this area.

Part of the tremendous job we face in building this new, wholly-integrated capacity lies down at Cerro Bolivar, near the Equator, in the deep interior of Venezuela.

Down there, we face the tremendous task of moving a whole mountain of iron — some of the richest iron ore this world has ever seen — through hundreds of miles of wilderness. To do this we must hack out roads and cart in enormous earth-moving equipment. We must install heavy machinery, huge conveyors, processing plants and laboratories. We must have a railroad, sorting yards, ore docks, and two new towns for our workers — complete with water supply, power plants, streets, sewers, and all the other costly improvements of modern municipalities. Beyond that, we will need a whole fleet of sea-going ore carriers to move our iron mountain across thousands of miles of water to our plants here in the United States.

That's a mighty big job, and right here, I would like to stop for a moment to express my appreciation for the friendly and understanding help which the Venezuelan government has accorded us in arranging for the development of this Venezuelan ore. Knowing that the survival of democracy on this earth may depend tomorrow on the steel that we produce today, these Venezuelan officials are playing a full, conscientious and patriotic part in the defense of the civilized world.

Many years ago, and long before there was any great public concern about it, the American steel industry began to worry about a possible shortage of iron ore.

It was clear that the high-grade, open-pit ores of the famed Mesabi Range were running low and might not last much more than 20 years longer if they were not conserved. It was probable, of course, that the

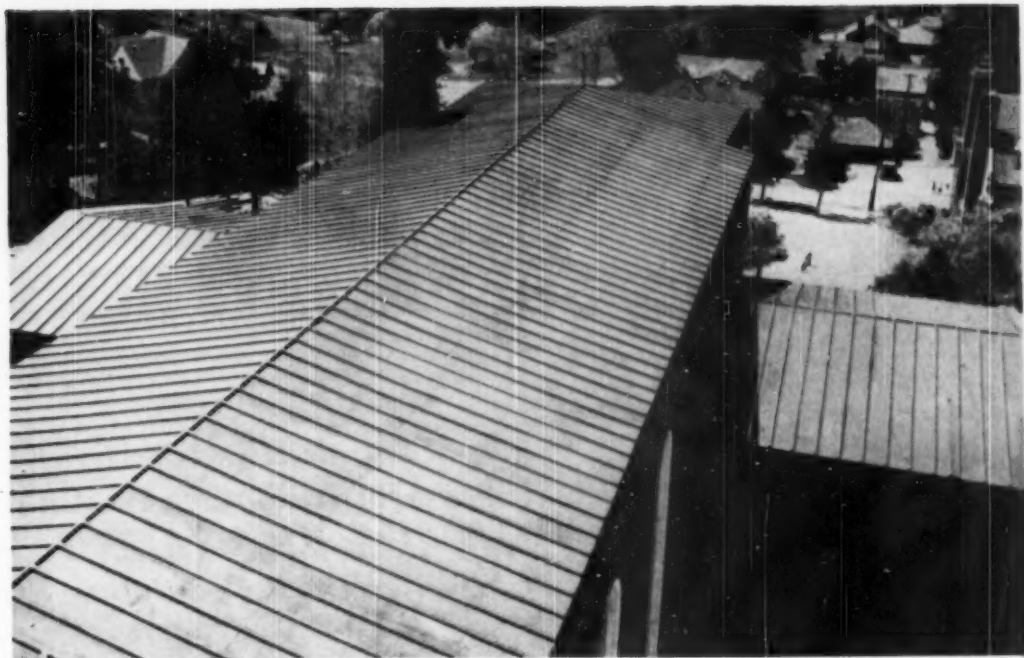
rich, hard-to-get metal in the underground mines would add enough to these resources to carry us well beyond the anticipated lifetime of most of the men who were then doing the worrying, but not beyond the expected needs of a nation that is only now in the first vigor of its youth.

So the search for foreign ores began in earnest, and while our geologists were combing the globe for the strike they finally made at Cerro Bolivar, our competitors, with equal perseverance and courage, were finding other deposits in Canada, Labrador, Liberia, and South America.

Hundreds of millions of tons of the world's richest ores were thus added to America's reserves, but still the industry was not content, because these sources might be cut off in time of war, and because the biggest iron treasure of them all lay right here at home in taconite deposits of the Lake Superior region.

Now taconite is just about the hardest, toughest rock you ever saw. It is estimated that there are some 72 billion tons of it in this country, and about one-third of that is iron. The trouble is that this iron is scattered through the rock in tiny particles, some of them so fine that they could be hidden under a single grain of face powder. And the problem has been to separate those particles of iron from the rock and to bundle them together by the millions into solid pellets that can be charged into a blast furnace.

I point this out because it seems to me that if we have really found the answer to taconite, as we think we have, and if we are permitted to develop our foreign deposits, as we think we can, then this indeed is one of the greatest contributions any private industry has ever made to any nation. Whatever else the history of this great country of ours may hold, I think it must then be recorded that the American steel industry — in these years of patient exploration and research — has given the people of America all the steel they will ever need for a long, long time to come.



ANOTHER LASTING ROOF OF **REVERE COPPER**

View from steeple of batten seam copper roof on St. Augustine's Church, Spokane, Washington. John W. Maloney, Architect, Seattle; Walter G. Meyers & Son, General Contractor; Krueger Sheet Metal Company, Fabricator; Eagle Metals Company, Revere Distributor—all of Spokane.

● Dollar for dollar, whenever you want lasting sheet metal construction, *there is no substitute for copper*. Because copper—beyond any other material commonly used for roofing, gutters and flashing—has proved its ability to give longer service per dollar of cost when properly designed and installed.

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widely distributed to architects and sheet metal contractors. There is probably a copy in your files. Be sure to refer to it as your guide to finer and more durable sheet copper construction.

Revere sheet and roll copper and other Revere quality materials are available from leading distributors throughout the United States. A Revere Technical Advisor will always be glad to consult with you without obligation.

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ASSOCIATION ACTIVITIES

Pennsylvania

E. W. Liebermann, Ambridge, Penn., secretary of the Sheet Metal, Air Conditioning and Roofing Contractors' Association of Pennsylvania, has announced that the association's annual convention will be held March 30-31, at Lancaster, Penn.

Mr. Charles Luppold of Reading is the convention chairman and Mr. C. K. Rhoads of Lancaster is chairman of the host committee.

Buffalo

The Buffalo Warm Air Heating Association postponed its initial meeting of the fall season, scheduled for September 6, and held a meeting in Hotel Markeen, Buffalo, on October 4. A guest speaker addressed the group and matters of current trade interest were discussed by association members.

Canadian Chapter

The monthly news letter of the Canadian Chapter of the National Warm Air Heating and Air Conditioning Association introduces a new manufacturer member—the Windsor Furnace Co., Windsor, Ont. With the joining of the Windsor Furnace Co. the Canadian Chapter's list of manufacturer members has now reached forty.

Michigan

In a recent news bulletin N. J. Biddle, secretary, Michigan Sheet Metal, Roofing, Heating and Air Conditioning Contractors Association, asks:

"What's your opinion, do you or don't you want a State License Law? We would like to know now so that we can get busy. We would particularly like to hear from some of our non-member readers in the smaller communities of the state as to what they think.

"Our belief is that the following will do the job:

1. All heating contractors in the state must secure a license regardless of whether they work under the supervision of a licensed general contractor or not, and regardless of the amount of an individual job.
2. The Commission should be authorized to establish minimum standards for the design and installation of all warm air heating equipment.
3. The Commission should be authorized to hold meeting on complaints about violators who do not comply within a limited period or who consistently violate the rules.
4. The Commission should be authorized to charge reasonable license fees, and these funds should be used to defray this activity of the Commission.

Coming Events

October 16-19—National Association of Housing Officials, 17th Annual Meeting, Detroit, Mich. John M. Ducey, Executive Director, 1313 E. 60th St., Chicago, Ill.

November 17-19—West Coast Refrigeration and Air Conditioning Educational Exhibits and Conference, sponsored by Refrigeration Equipment Manufacturers Association, 1346 Connecticut Ave., Washington 6, D. C.

December 5-6—National Warm Air Heating and Air Conditioning Association, 37th Annual Convention, Hotel Statler, St. Louis, Mo. George Boeddener, Managing Director, 145 Public Square, Cleveland, Ohio.

December 6-7—National Heating Wholesalers Association, Inc., Annual Meeting, Sheraton Hotel, St. Louis, Mo. E. L. Wyman, Executive Secretary, 609 Union Commerce Building, Cleveland 14, Ohio.

Jan. 11-13, 1951—Sheet Metal & Roofing Contractors Association of Minnesota, Annual Convention, Lowry Hotel, St. Paul. Ray J. Kraus, Secretary, 508 S. 7th St., Minneapolis, Minn.

Jan. 21-25—National Association of Home Builders, 7th Annual Convention and Exposition, Stevens and Congress Hotels, Chicago, Ill. E. M. Spiegel, Convention Chairman, Passaic, N. J.

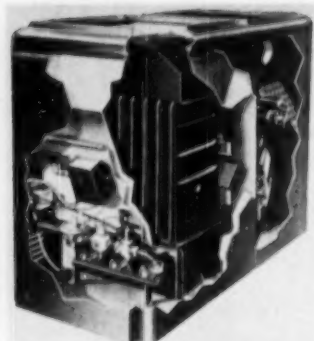
Jan. 22-25, 1951—American Society of Heating and Ventilating Engineers, Annual Meeting, Belden Stratford Hotel, Philadelphia, Penn. A. V. Hutchinson, Secretary, 51 Madison Ave., New York, N. Y.

Jan. 22-26—10th International Heating, Ventilating and Air Conditioning Exposition, under auspices of American Society of Heating and Ventilating Engineers, Commercial Museum, Philadelphia. International Exposition Co., Grand Central Palace, New York City.

February 1-2—Sheet Metal and Warm Air Heating Contractors Association of Indiana, Inc., 33rd Annual Convention, Hotel Severin, Indianapolis. Frank E. Anderson, Secretary, 439 S. 17th St., Terre Haute, Ind.

EQUIPMENT DEVELOPMENTS

Use Coupon on Facing Page



Gas Fired Furnaces . . . 173

New Ingersoll GL series of gas fired winter air conditioners are available with input ratings of 78,125, 93,750, 109,375, and 125,000 Btu. All models in the series are unusually compact due to the inclusion of a compactly designed wedgetube heat exchanger.

Two lowboy models occupy 20 x 51 in. of floor space, two larger models 20 x 54 in. This unit is especially designed for basements or where space is limited.

Units are factory assembled and wired. Assembly includes a specially designed wedgetube heat exchanger, blower, filters, raised drill port burners, and fully automatic controls.

Approved by AGA for use with natural, mixed, manufactured, and LP gases.

Borg-Warner Corp., Chicago 4, Ill.



Positive Action Latch . . 174

Tutch Latch, a new positive action latch, opens cabinet doors automatically at the touch of finger, wrist, or elbow.

Designed for both metal and wood cabinets, it is easy to apply. May

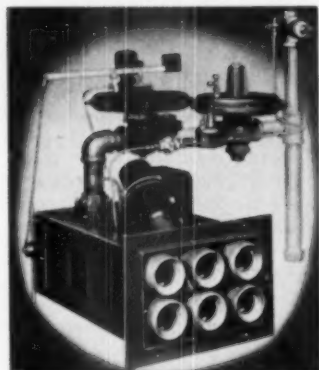
be snapped in or spot welded on the inside of metal cabinets. Positive latching action and ease of operation are among its many advantages.

Included in the wide range of metal product uses for new latch are utility cabinets, space heaters, or almost any product with swing door. National Lock Co., Rockford, Ill.

Gas Conversion Burner . 175

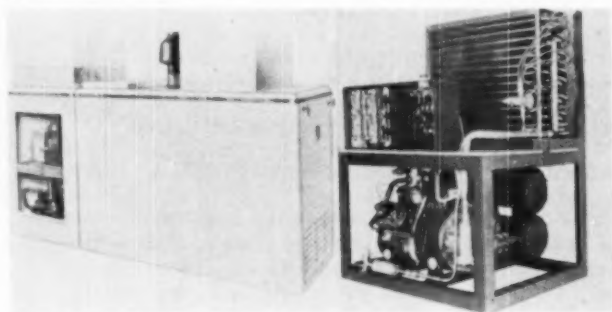
Model 1400 multi-torch gas conversion burners are specifically designed for conversion of large size furnaces in apartments, churches, office buildings, and other commercial establishments to fully automatic gas operation. Burners are made in seven capacities from 400,000 to 1,500,000 Btu input.

They are compact, natural draft assemblies, designed for asphit installation. Assemblies consist of a group of injector torches (3 to 12) attached to a cast manifold and en-



closed in a sheet metal duct. A spark ignited draft-lite pilot, ignition transformer, diaphragm gas control valve, automatic air door, and electronic safety cutoff complete the standard equipment on the assembly. Control components are self-checking during each cycle of operation.

Bryant Heater Div., Cleveland, Ohio



Summer Air Conditioners . . . 176

New summer air conditioners are designed to be used in conjunction with warm air furnaces.

Primarily designed for residential cooling, units also may be used to cool offices, stores, and other places of business.

Available in six sizes: two, three, five, six, eight, and ten tons.

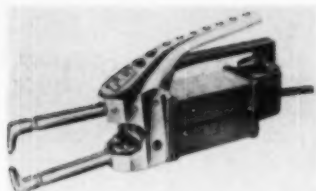
Known as the Marvellaire, new unit furnishes year round air conditioning at low cost since it utilizes the fan and ducts of a warm air heating system.

Essential parts of the machine are a reciprocating totally enclosed compressor, five row staggered tube coil, and cleanable type shell and tube condensers.

Units are available for either single or three phase current.

The six, eight, and ten ton units are furnished with dual compressors. Each of the units equipped with dual compressors operates as a single refrigeration unit and each has its own coil and condenser section.

The Meyer Furnace Co., Peoria, Ill.



Portable Spot Welder . . . 177

A new portable spot welder known as the Zip features fixed top tong, newly designed adjustable curved tips, and overall construction.

It is a perfectly balanced unit, with center of gravity at the carrying point, therefore requiring only one hand to operate. Assorted tong lengths and shapes are available for specific spot welding applications.

Unit is completely portable, weighing 23 lbs. Welds mild steel, stainless, galvanized steel, terne plate, and magnesium up to 1/8 in. combined thickness of metal.

Models are available for either 110 v or 220 v ac.

Mid-States Welder Mfg. Co., Chicago, Ill.



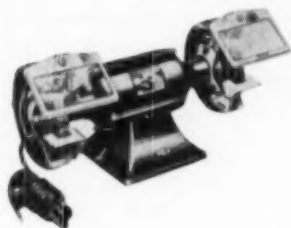
Level Attachment 178

A new level attachment for all makes of electric hand drills enables anyone to drill straight holes horizontally, vertically, or at any angle, through floors, ceilings, timbers, metal, or masonry by merely watching the bubble.

Tool has a slotted base 3 in. long, 1 1/2 in. wide, and is precision-made of aluminum. From the center of the base rises a slotted holder with hand set screw which contains a 1 3/4 in. thoroughly protected bubble level unit that may be securely set at any desired angle up to 90 deg. Due to the cut-off corners of this holder,

vertical, horizontal or 45 deg angles may be set instantly without further adjustment and are easily held. Intermediary angles are also acquired by adjusting and tightening the hand set screw with thumbnail.

Singer Kennedy Corp., Chicago, Ill.



Compact Grinder 179

A new 1/3 hp Delta grinder includes many features for safety, accuracy, and convenience. Among the features are shatter-proof glass safety shields, a steel spark guard at the top of each wheel, tool rests that are fully adjustable to any grinding angle, and a three-wire cord that can be grounded if desired.

The motor has sealed, lubricated-for-life bearings.

Grinder is compact, measuring only 20 in. from side to side with safety shields, 9 in. high, and 8 in. deep.

Delta Power Tool Div., Rockwell Mfg. Co., Milwaukee 1, Wis.



Gas Burners 180

New series of Delco-Heat gas conversion burners known as the GC series are available in two sizes providing AGA certified input capacities from 75,000 to 300,000 Btuh for natural and mixed gases, and from 75,000 to 225,000 Btuh for artificial gas.

Burner is of the up-shot, single port type, employing a special stainless steel flame spreader which directs the flame evenly and efficiently to all sides of the combustion chamber regardless of shape.

Standard controls include an automatic pressure regulator, automatic main control valve, automatic safety pilot, main shut-off valve, and pilot shut-off valve.

All controls are contained within a compact cabinet 16 1/8 in. wide, 11 in. deep and 10 1/2 in. high.

Delco Appliance Div. of General Motors Corp., Rochester 1, N. Y.

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EQUIPMENT DEVELOPMENTS

(Use Coupon on Page 103)



Centrifugal Blower . . . 181

Model 81 1/2-12 single inlet utility blower was built for small volume, low pressure applications requiring maximum air from a compact unit. Blower is light in weight, is built entirely of steel. Housing members are press-formed from .035 gauge and welded into a solid unit. Wheel is 31 1/2 in. in diameter, 3 1/4 in. wide. Exhaust opening is large and rectangular so ducts can be easily constructed and attached. Collar is welded around inlet opening for easy attachment of air supply duct.

Schweitzer-Cummins Co., Indianapolis, Ind.

Counter-Flow Furnace . . 182

New counter-flow type furnace is based on Mor-Sun utility model. Heat exchanger in new models is similar to the utility model for each fuel. The blower and blower motor are at the bottom, out of the way of the ambient heat during off periods. The return air is heated as it is drawn through the unit; then as the blower distributes it through the ducts, just enough heat is transmitted



through the floor slabs to keep floors at comfortable temperature; balance flows into the rooms.

Type 4-OV with OV ball flame

mechanical draft oil burner is designed primarily for perimeter heating. Consideration is given to possible later conversion to gas firing.

Type 4-C is equipped with single port, non-clog gas burner, is AGA approved. Listed by UL for zero inches clearance.

Morrison Steel Products, Inc., Buffalo 7, N. Y.

Suspended Unit Heater . 183

Suspended unit heater (series UHS fan type) is AGA approved for natural, mixed, manufactured, or LP gas. A complete, packaged unit, fully automatic, heater is suspended from the ceiling to conserve floor space.



Units are designed for maximum quiet operation with highest possible air delivery. Standard equipment includes the heater with fan, motor, fan guard, safety shutoff, regulator (except on LPG),

firing cock, line voltage, solenoid valve and thermostat.

Each heater is equipped with adjustable louvers to direct the flow of warm air.

Available in three sizes which will meet almost all unit heater requirements.

John Zink Co., Tulsa, Okla.



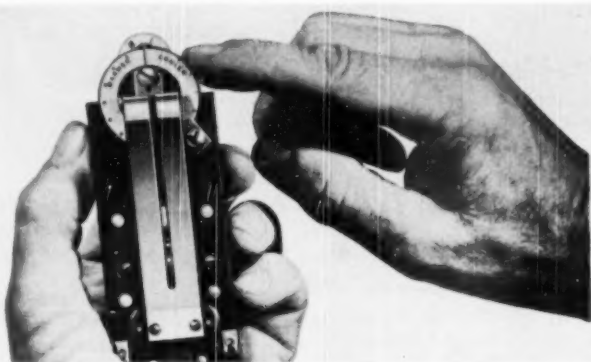
Commercial Gas Burner . 184

Large capacity gas conversion burner permits quick and easy conversion of industrial and commercial heating plants.

Each burner is factory tested.

Available in three models: 500,000, 750,000, and 1,000,000 Btu input per hour, for use with natural, mixed, and manufactured gas.

Norman Products Co., Columbus, Ohio



Warmer-Cooler Thermostat Dial 185

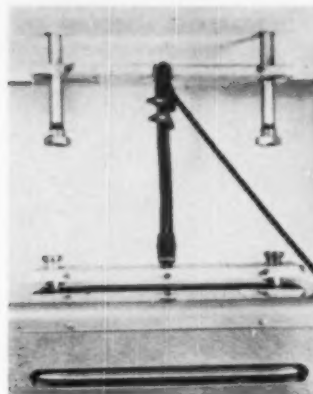
Warmer-cooler temperature dial makes it possible for the user to tune in heating comfort instead of selecting a certain number of degrees.

Heat flow is automatically controlled to provide the proper amount by permitting variance of the length of time the burner operates. For example, set at "S" (short "burner on" periods), the burner operates at short intervals; set at "L" (long

"burner on" periods) it operates for long intervals with a full range of adjustment between.

Because each house is different in size, insulation, or type of heating, the balanced ration of heat provided is an economical solution to getting greater comfort through more even heat.

Perflex Corporation, Milwaukee 7, Wis.



Lift Assembly 186

New lift assembly for use in hoisting and lowering unit heaters eliminates physical labor and cuts installation time.

Lift assembly brings heaters within 7 in. of the ceiling and can be used with or without the 24 and 36 in. hanging boards, currently in the manufacturer's line. The latter serve now as anchors for hoisting heaters by block and tackle or electric hoist, and to finish the ceiling and supporting pipes in appearance.

Assembly can be used over and over for any type installation and serves to lower and hoist heaters for cleaning purposes.

Used with any Reznor heater, Reznor Mfg. Co., Mercer, Penn.



Two loops, formed at 45° angles, show Prestole's new P-1079 sheet metal nut



Assembled to starting with an inch-wide, "floating" cage nut.

Cage Nut 187

New cage nut, P-1479, doesn't require a separate cage. Is locked in place by merely dropping it over

two pre-punched loops that are quickly pulled up with ordinary pliers.

Nut is quickly locked in place because the loops are already formed at a 45 deg angle as illustrated. It is produced to fit most popular sizes of sheet metal screws. Is made of spring steel, or can be made of mild steel, depending on the torque requirement. Conical shaped impression is formed in the nut to provide a 360 deg helical thread-grip on the screw thread.

Prestole Corp., Toledo 5, Ohio

Cooling Towers 188

Two new evaporative water coolers, TE-10 and TE-15, are now being produced with new corrosion-proof features.

Body and packing are of asbestos cement sheets which cannot corrode.



All parts used for assembly and operation are made from non-oxidizing copper alloys. The blower and frame are protected by heavy hot-dipped galvanizing.

Coolers are also equipped with flue-gas water treatment kits which eliminate the scale-forming properties of hard water.

Model TE-15 evaporates a maximum of only 15 gallons of water per hour and is capable of cooling over 1,000 gallons (by a drop in temperature of 17 deg F) in one hour. Model TE-10 evaporates a maximum of only 10 gallons of water per hour and is capable of cooling over 650 gallons in one hour.

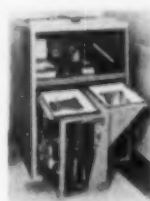
Coolers are designed for use with manufacturer's all-year air conditioner which cools and heats with gas or steam, and with their self-contained air conditioner.

Servel, Inc., Evansville, Ind.

Residential Coolers 189

New residential air conditioners are available in six models to fill cooling requirements in any size

dwelling. They are easy and economical to install and carry reasonable price tags.

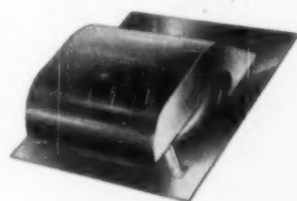


Flexible in application, conditioner can be installed in conjunction with any forced warm air heating system, also as an independent central system, or even in a series of individually located remote units. Ease and economy of installation are possible as the unit's unique design permits utilization of regular heating air ducts and furnace fan without structural design changes or building alterations.

Conditioner has a completely hermetically sealed unit. The entire cooling circuit, compressor, condenser, refrigerant lines and cooling coils are sealed at the factory making it air, gas, and dirt tight.

The hermetic seal also eliminates servicing problems. Since gas cannot leak out, complete safety of operation is assured. Should a failure occur, the entire cooling circuit can be quickly replaced with another factory-sealed and tested unit.

York Corporation, York, Penn.



Slant Roof Ventilator . . 190

New slant roof ventilators are open on three sides to provide increased ventilation. A new principle is used in the design of the base; venturi opening is stamped from one piece, with no cracks or joints. Wind blowing across venturi opening creates siphon effect that helps pull air out of the attic.

A special flanged baffle ring keeps snow or rain from blowing into attic. Leigh Bldg. Prods. Div., Air Control Products, Inc., Coopersville, Mich.



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You get *more for your money* every driving mile, because Chevrolet trucks are economical to operate. The top-rated efficiency of Chevrolet Valve-in-Head engine design saves money on gas and oil day in, day out.

You get *more for your money* right through the years, because your Chevrolet truck cuts upkeep to the bone. Hypoid rear axles, diaphragm spring clutch, ball-type steering and many other great truck features help keep your truck on the job and out of the shop.

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CHEVROLET MOTOR DIVISION, General Motors Corporation
DETROIT 2, MICHIGAN

These Great Features Help Tell Why CHEVROLET TRUCKS ARE THE FIRST CHOICE OF TRUCK BUYERS EVERYWHERE

TWO GREAT VALVE-IN-HEAD ENGINES: the new Loadmaster and the improved Thriftmaster—to give you greater power per gallon, lower cost per load • **THE NEW POWER-JET CARBURETOR:** smoother, quicker acceleration response • **DIAPHRAGM SPRING CLUTCH** for easy-action engagement • **SYNCHROMESH TRANSMISSIONS** for fast, smooth shifting • **HYPOID REAR AXLES**—5 times more durable than spiral bevel type • **DOUBLE-ARTICULATED BRAKES**—for complete driver control • **WIDE-BASE WHEELS** for increased tire mileage • **ADVANCE-DESIGN STYLING** with the "Cab that Breathes" • **BALL-TYPE STEERING** for easier handling • **UNIT-DESIGN BODIES**—precision built.

HOW TO **SWELL PROFITS** AND LOWER INVENTORY



TYPE FOL-60
Warm Air Limit Control
or Fan Control

STOCK NEW

CRISE TEMPERATURE CONTROLS

**YOU CAN USE THIS CRISE UNIT EITHER AS A WARM AIR
LIMIT CONTROL OR A FAN CONTROL**

No matter what you pay you can't buy better built controls than the reasonably priced Crise line. Nowhere else can you get such installation ease, plus the flexibility in application that permits you to stock fewer types of controls. Installation men say that

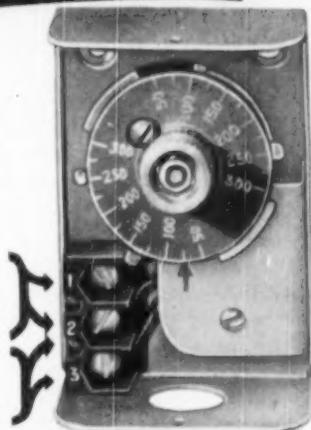
by carrying dual purpose Crise controls to the job they are sure to have the right unit at hand. Consider the advantages of the Crise Type FOL-60 (shown with cover removed). Then write for catalog and attractive price schedule.

WIRE TERMINALS 1 & 2 FOR LIMIT CONTROL

This unit then becomes a safety hi-limit control for warm air furnaces to prevent overheating

WIRE TERMINALS 2 & 3 FOR FAN CONTROL

The unit now becomes a fan or blower control for warm air systems



CRISE CONTROLS DIVISION
ACRO MANUFACTURING COMPANY
COLUMBUS 16, OHIO

THE MOST VERSATILE LINE



TYPE FOL-50
Hot water control,
surface or strap-
on type



TYPE FAL-10
Combination furnace
fan and limit control



TYPE FAF-15
Two speed fur-
nace fan control



TYPE FAL-30
Hot water control, dual
circuit, immersion type



TYPE FOL-70
Hot water control,
immersion type

WE TREAT 'EM ROUGH, TO MAKE 'EM BETTER!

● Very few tools take the abuse that the average screwdriver absorbs. Because of this, Crescent Screwdrivers are subjected to stringent tests before they leave the factory. The Torsion Test illustrated shows how we "Treat 'em Rough, to Make 'em Better." Individual "Temper Tests" also check the full-length hardening of the blade.

Crescent Screwdrivers are made to strict specifications. That's why experienced industrial buyers prefer them. They find too that Crescent's better manufacturing procedure shows up in terms of greater safety for the worker. There is a Crescent for every class of work . . . blade lengths from 1½ to 12½ inches. Be Safe . . . standardize on these fully-guaranteed Crescent Tools.



The Torsion Test to which every Crescent screwdriver blade is subjected before assembly

CRESCENT TOOL COMPANY, JAMESTOWN, N. Y.

"Crescent" is our trade-mark, registered in the United States and abroad, for wrenches and other tools. Sold by leading distributors and retailers everywhere and made only by Crescent Tool Company, Jamestown, N. Y.



CRESCENT TOOLS

Give Wings to Work

*Sign of the Artisan
Symbol of Excellence*

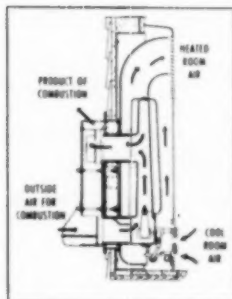
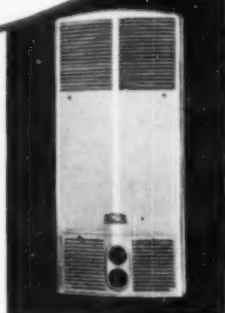
Only STEWART-WARNER "SAFETY-SEALED" Units bring all these advantages to Zone-Controlled Gas Heat!

- Small, compact units applicable to one room, a suite of rooms or an entire building!
- All combustion products vented directly through a safety-sealed, exterior wall vent!
- No room air is used for combustion!
- Dependable, low-cost zone-heating with manual or thermostat control!
- Easily recessed into walls of wood, brick, plaster, stucco or cement-block construction!
- Rated inputs from 14,000 to 31,000 BTUs per hour!

2 model sizes assure the best possible answer for most heating requirements. Handsomely styled to suit any interior. The inside wall panel is available in Ivory, Beige or Aluminized finish.

Model 991-14 14,000 BTU/HR
18" x 24" x 4"

Model 992-20 20,000 BTU/HR
18" x 30 1/2" x 4"



Exclusive "Safety-Sealed" design positively seals all fuel gas, flame and flue gases from contact with heated room air. "Safety-Sealed" exterior vent draws all combustion air from outdoors, vents all combustion products outside through the wall! Interior wall panel extends only 4 inches from the wall surface. Connects directly to the small exterior wall vent.

These Stewart-Warner Heaters are "Safety-Sealed," Too!



SOUTH WIND ZONE HEATING SYSTEM
Easily installed in any inside or outside wall. Two suitcase-size units heat average home. Automatically modulated forced-air heat. Thermostat control.



SOUTH WIND ZONE FURNACE
Compact, forced-air unit. Easily tucked away under the floor, in a closet or any convenient space. Short ducts from centralized installation. Thermostatic control.



This "Safety-Sealed" *Saf-Aire* model, for example, is a completely independent, automatic gas heating system that provides safe, reliable heat for an entire building, remote zone, or a single hard-to-heat room.

Every room or zone is heated to its individual requirements with new convenience, comfort and economy unattainable with conventional-type central heating plants.

Exclusive "Safety-Sealed" construction seals all combustion air and products from contact with heated room air. The patented exterior wall vent draws in outside air for combustion, then vents all combustion products outside.

Easy to install in any exterior wall, this versatile "packaged" heating unit needs no chimney, ducts or electricity! Only one utility connection is required—the gas line. No basement, closet or floor space is wasted.

Now available with manual or thermostat control, *Saf-Aire* operates with equal dependability and silence on natural, manufactured or LP gas. Just set each unit for the desired level of heat, then forget it!

WRITE NOW

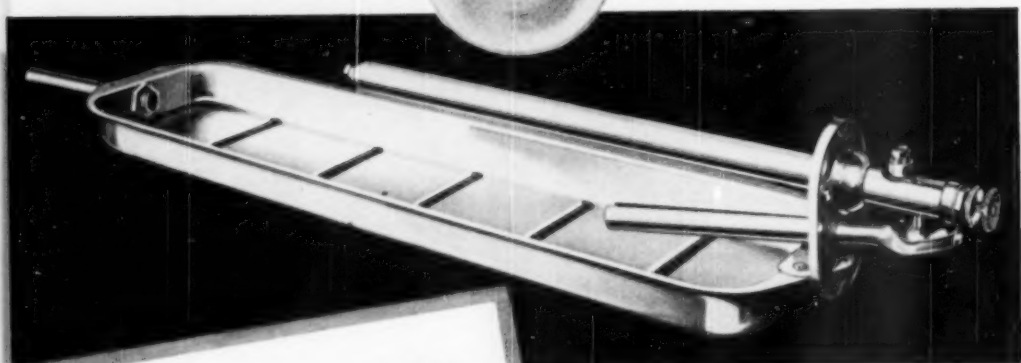
for complete, free information and specifications on the complete line of Stewart-Warner "Safety-Sealed" Gas Heating Systems. Select dealerships are still available in some territories. Address inquiries to 1581 Drovers Street, Indianapolis 7, Indiana.



Approved by American Gas Association

STEWART Warner
DOMESTIC HEATING

**EACH DROP OF
WATER VAPORIZES AS IT
STRIKES HEATED PAN!**



**THERMO
DRIP**
Automatic
HUMIDIFIER

Water drips—*AT PRE-SELECTED SPEED*—into fast-heating, stainless steel pan. Drip feed principle gives almost immediate vaporization—makes a much more efficient working humidifier.

There is never a stagnant pool of water to re-heat before vaporization begins—only a thin film of water ever forms in pan.

These features assure superior performance at LESS COST.

SUPER-SENSITIVE THERMOSTAT

Fail-proof. Starts or stops the flow of water according to bonnet temperature.

OUTSIDE SCREW ADJUSTER

Easy to regulate. Fingertip control.

12 PAN SIZES

Installs quickly—easily in every type warm air furnace.

1 KIT TO PURCHASE

NEW, IMPROVED AIR-TIGHT VALVE ORIFICE
Has positive seating action.

DRIP FEED PRINCIPLE

Water does not spray or run—Passes through funneled orifice.

Write TODAY for free literature. Dept. A-100

Automatic Humidifier Co. CEDAR FALLS, IOWA



It's the line designed with your profits in mind

Now you need but *one* gas furnace line to provide complete service for your entire community. The new Rheem line in highboy, lowboy, gravity, floor furnace and console series includes a unit for every heating need. Attractively styled in sparkling new graytone baked enamel, each model offers, too, all the many advanced features your customers have always wanted in *one* heating unit! It's proof that Rheem will lead in the gas furnace market, too!

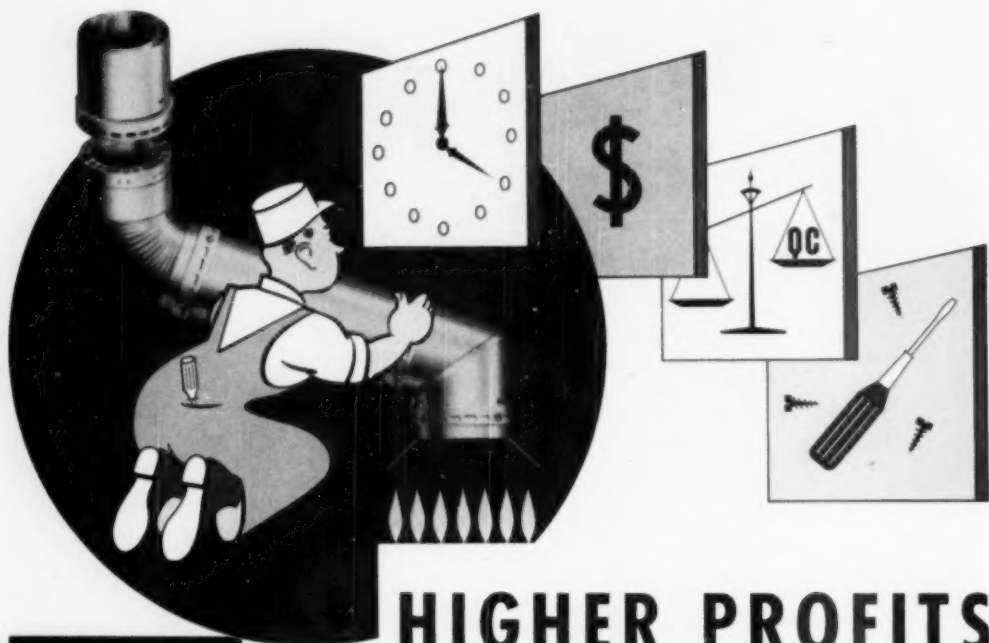
By increasing production facilities, Rheem now offers faster, more dependable delivery and service. So why not establish yourself in your community as the dealer with a *complete* gas furnace

line to meet the requirements of any home? Feature Rheem winter air conditioners — the line designed with your profits in mind!

rely on **Rheem**

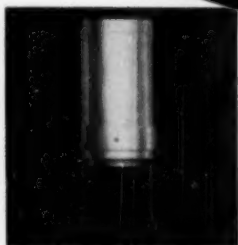


RHEEM MANUFACTURING COMPANY
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Regional Offices:
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1025 Lockwood Drive, Houston 20, Texas
7600 S. Kedzie Ave., Chicago 29, Illinois
29-20 41st Ave., Long Island City 1, New York
Sparrows Point 19, Maryland

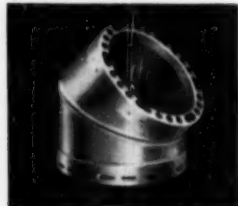


HIGHER PROFITS SAFER VENTING

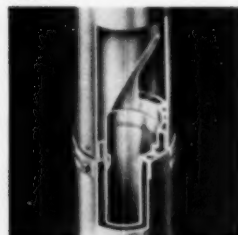
WITH  LISTED QC METALBESTOS GAS VENT



Adjustable length eliminates cutting, speeds erection.



Adjustable elbows simplify installations.



Double wall, all aluminum pipe assures correct venting.

More Installations per Hour . . . More jobs can be finished per man each day than is possible with any other UL listed Type B gas vent. No special tools or skills are needed. Adjustable lengths permit fractional adjustments during and after installation . . . costly jigs, cutting and cementing of joints are eliminated. Single or multiple installations are finished faster and safer when you use QC Metalbestos.

Easy to Handle . . . A carton containing 45 feet of 4-inch Metalbestos weighs only 32 pounds. One man can load, stock-pile or install even the largest diameters without fatigue — can carry 90 feet of pipe at one time with ease.

Safe and Durable . . . Precision manufacture assures automatic alignment, gas-tight joints and a completely safe installation. The pure aluminum inner wall attains efficient venting temperatures rapidly . . . condensation and sweating are held at a minimum. Maximum insulation and the high resistance of Metalbestos to weather and corrosion insure long years of trouble-free operation.

REMEMBER . . . Metalbestos Gas Vent meets or exceeds all safety requirements of the Underwriters' Laboratories for Type B gas vents.

Order from your local jobber or write to Dept. B



METALBESTOS DIVISION

WILLIAM WALLACE COMPANY • BELMONT, CALIF.

**LOWELL McCORD,
Viking Salesman Says:**



**"Here's Proof that
VIKING Blower Quality
Means Extra Dealer Profits"**

For appearance, design and quality, the Viking Blower Package tops the blower package field. That's why Viking blower dealers cash in on extra sales during every season. Why not join these wide-awake Viking dealers now and share in the added profits? Use Viking promotion materials to sell blower packages—let Viking Blower Quality do the job of keeping them sold.

**SEE WHAT THIS PROGRESSIVE ST. LOUIS JOBBER SAYS ABOUT
VIKING QUALITY BLOWERS**



"Our dealers like Viking blowers because installation is quicker, because operation is trouble-free. And they like Viking blowers because Viking quality means faster sales—more sales—more profits," states

**EDWARD C. KUNTZ, Heating Dept. Mgr.
AHRENS & McCARRON, INC.**



these Forward-looking Dealers Offer further Proof:



WES JONES, Reliable Heating
5473 St. Louis Ave., St. Louis, Mo., says:
"I don't have a slack season anymore, now that I'm selling Viking Blower Packages."



AL ZAGAR, Zagar Heating & Sheet Metal
105 Stebbins, Webster Grove, Mo., says:
"Extra business is coming my way because Viking blower quality really impresses my customers."



ALBERT E. BERKEL, Berkel Sheet Metal & Furnace Co.
6631 Manchester Ave., St. Louis, Mo., says:
"Viking blowers look good and work efficiently. What more could a dealer want?"

Viking
AIR CONDITIONING CORP.
5601 Walworth, Cleveland 2, O.



FANS



HUMIDIFIERS



BLOWER
ASSEMBLIES



BLOWER WHEELS



PACKAGE
BLOWERS



AUTOMATIC COMFORT CONTROL TOP REGULATES SPACE HEATERS

THERMOSTATICALLY

You, as a dealer, know the sales-making advantages of Thermostat Controlled Heat. Always found on only the most expensive heating systems, it is now available for all your Space Heater customers, too.

Tell them about it. Display the A-P Automatic Comfort Control Set. Explain its benefits to your floor salesmen. You will perform a beneficial service to your space heater customers — at high profit to you. Remember, this easily installed Comfort Control Set works on ALL A-P Controlled Oil Heaters you have sold since 1939, as well as on those you are selling now. This means an EXTRA sale and profit on all your past heater sales, and an INCREASED profit on new heater sales.

AUTOMATIC PRODUCTS COMPANY

2452 North Thirty-Second Street, Milwaukee 45, Wisconsin

Illustrated is the A-P Comfort Control Top Model 240-ED for space heaters with one or two burners.

TEN MILLION READERS of National Magazines are learning the advantages of A-P Dependable Controls and AUTOMATIC COMFORT CONTROL. Illustrated banners that merchandise these important A-P advantages are available free. Write us or ask your distributor or manufacturer.



DEPENDABLE
OIL *Controls*

Standard Equipment on Vaporizing Oil Burning Heaters, Furnaces, Floor Furnaces, Water Heaters



TEAMING UP... to Keep Costs Down

Ben Faragalli is an assembly man in one of RCA Victor's television manufacturing plants. His job is final assembly of RCA Victor TV receivers.

His experience is that RB&W tapping screws help him keep up his production and turn out quality work. Their surfaces are always smooth and clean—so they are easy to handle. Their dimensions are always accurate, their threads sharp, their heads strong—so they speed his work and reduce rejects.

Ben helps RCA Victor keep assembly cost low—which is reflected in lower total manufacturing costs and more profitable business.



Joseph Luzzi is in charge of RB&W's carburizing—a surface-hardening process which produces a deep and uniform case and enables men like RCA Victor's Ben Faragalli, using RB&W tapping screws, to do faster work.

It is one of many processes in which RB&W bolts, screws, nuts and rivets receive specialized treatment dictated by customers' individual requirements. Breadth of facilities is one of the reasons why RB&W tapping screws, cap screws, machine bolts, carriage bolts, machine screws, nuts, rivets and other fasteners are considered "first choice" by so many of America's leading manufacturers.

RB&W

The Complete
Quality Line

RUSSELL, BURDSALL & WARD BOLT AND NUT COMPANY

Plants at: Port Chester, N. Y., Canonsville, Pa., Rock Falls, Ill., Los Angeles, Calif. Additional sales offices at: Philadelphia, Detroit, Chicago, Chaffeeville, Oakland. Sales agents at: Portland, Seattle. Distributors from coast to coast.

105 Years Making Strong the Things That Make America Strong

YOU CAN BID ON MORE JOBS

WITH THIS PROFITABLE NEW PLAN

Now you can use famous Servel equipment on *any* job—from the simplest cooling need to complete all-year air conditioning. New plan lets you select *only* the sub-assemblies you need. Make big savings in space, time and cost.

Here's what this new

PLAN means to YOU

- you can offer the world's finest equipment for any work you bid on
- you can get jobs you might otherwise have to pass up
- you buy only what you need to get the best solution for each conditioning problem—even save on enclosing-panels unless desired for appearance.
- you need only a minimum of floor space
- you can keep job costs at rock-bottom
- you can make more profits

WRITE FOR full information about the Servel "Custom Assembly" Plan and the name of your local Servel distributor: Servel, Inc., Air Conditioning Division, Evansville 20, Indiana.

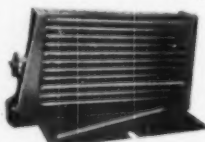


Here's how the Servel
"CUSTOM ASSEMBLY"
Plan works—



START WITH A
SERVEL COOLING UNIT,
quiet, no moving parts, steam-
operated.

If you need heating . . .



SELECT A SERVEL HEATING COIL,
non-ferrous construction—faster heat
transfer.

If you need humidification . . .



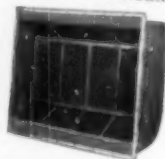
SELECT A SERVEL HUMIDIFIER,
copper—to resist corrosion, removable
for cleaning.

For air movement . . .



SELECT A
SERVEL FAN,
insulated for sound absorption, no sweat-
ing outside, automatic volume control for
seasonal variations in air quantity.

When it comes to cleaning . . .



SELECT SERVEL FILTERS,
extra-large surface for longer life—higher
cleaning efficiency, tight fitting for greater
effectiveness in filtering pollens.

If you need a source of steam . . .



SELECT
A SERVEL
STEAM
GENERATOR,
BURNERS,
CONTROLS

Cost iron, long life—small water capacity
for fast action—automatic water-level
control—high heat-transfer for efficiency.

Servel All-Year Air Conditioning

Stainless Steel is setting the pace in dust-collecting, ventilating and cooling systems

*Are you getting
your share of
this business?*



Forming Stainless Steel strip on a Cincinnati press
brake at Kelco Corporation, Baltimore



Working Stainless Steel on a Wiedemann R-7 turret punch press
at Kelco Corporation, Baltimore, Md.

STAINLESS STEEL'S ability to far outlast other materials in the face of corrosive conditions makes it the most economical material for dust-collecting, ventilating and cooling systems.

Customers have been quick to recognize this, and fabricators are cashing in on this profitable business. Any shop—large or small—that maintains high standards of workmanship will find Stainless Steel a material easy to fabricate for these applications—especially if it is U-S-S Stainless Steel.

In U-S-S Stainless Steel, you have a perfected, service-tested material, available in the widest range of forms, sizes, grades and finishes. Thus you can select a material that not only meets all service requirements, but one that simplifies your fabrication as well.

If you have any questions concerning selection of the right Stainless for your product, our Stainless Steel engineers will gladly assist you. Contact our nearest sales office.

AMERICAN STEEL & WIRE COMPANY, CLEVELAND • CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH

COLUMBIA STEEL COMPANY, SAN FRANCISCO • NATIONAL TUBE COMPANY, PITTSBURGH • TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM

UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST • UNITED STATES STEEL EXPORT COMPANY, NEW YORK



U-S-S STAINLESS STEEL

SHEETS • STRIP • PLATES • BARS • BILLETS • PIPE • TUBES • WIRE • SPECIAL SECTIONS

UNITED STATES STEEL

NOW'S THE TIME TO "TIE IN" WITH

SHAFCONAIRE*

* formerly known as SHAFCO

**Leader in
the Overhead
Oil-Fired Heating
Market**



That's right, Heating Men!
There's no time like now . . .
right now to get set with SHAF-
CONAIRE OverHead Heaters.
They're big business boosters,
extra profit producers. For SHAFCONAIRE, you
know, is the original suspended oil-fired furnace
known for years as SHAFCO. It's quality-built from
end to end . . . designed especially for use in com-
mercial and industrial buildings. Not just a domestic
floor-type unit tilted horizontally on its side. And
SHAFCONAIRE has been time-tested, thoroughly
proved in use . . . the only furnace of its type backed
by over 12 years actual operation in the field.

MODELS from 100,000 to 405,000 B.T.U. for single
or multiple unit installation to meet a wide range
of commercial and industrial heating requirements.

OVERHEAD HEATERS, INC.

(formerly SHAFCO Distributing Corporation)

1334 BOOK BUILDING • DETROIT 26, MICHIGAN

OVERHEAD HEATERS, INC.

1334 BOOK BUILDING • DETROIT 26, MICHIGAN

Please send me complete information and Price Lists on
SHAFCONAIRE (formerly SHAFCO) OverHead Heaters.

Name _____
Company _____
Address _____
City _____ Zone _____ State _____



And here's
something
to talk
about

4 ESSENTIAL FEATURES FOUND ONLY IN SHAFCONAIRE

- 1. BUILT-IN PLENUM CHAMBER**—An exclusive patented feature that saves you plenty of time, trouble, and guess-work in making installations. Assures uniformly heated warm air output, eliminates on-the-job sizing and extra sheet metal work. Just tap off ducts from end, top or both sides to meet installation requirements.
- 2. HEAVY DUTY CONSTRUCTION**—Use of heavy gauge welded boiler plate assures long-life, trouble-free operation. No warping, no buckling, no burn-outs common to stamped steel construction.
- 3. INTERMEDIATE HEAT-TRAVEL SECTION**—Patented intermediate chamber between refractory-lined firebox and heavy gauge heat exchangers serves to spread flame and eliminate impingement on metal. Permits expansion of hot gases, improves operating efficiency.
- 4. EFFICIENCY ENGINEERED HEAT EXCHANGER**—Alternately spaced baffle plates in each of the heat exchanger sections effectively retard the flow of hot gases toward stack connection, permit maximum transfer of heat.

**DON'T DELAY!
SEND COUPON TODAY!**

You'll get complete details
and price information on
the "hottest" bet for extra
profits in the present heat-
ing market.



For a neat job of through-wall and counter flashing



with ANACONDA Through-Wall Flashing

Heretofore, the usual practice has been to tuck metal counter flashing into the mortar joints of a parapet wall and raise the exposed portion of the counter flashing in order to install the base flashing, then bend it down again to make the job storm-tight.

That's outmoded. Outdated. And needlessly expensive. Besides, you simply can't get a neat job that way. The metal, when bent down and up, cannot be made to lie snugly against the wall.

ANACONDA Through-Wall Flashing has a plain selvage that makes installation of the counter flashing neat, fast and simple. Incidentally, no other through-wall flashing has this feature.

With ANACONDA Through-Wall Flashing two easy operations do the trick as shown in these drawings.



Information on ANACONDA Through-Wall Flashing and procedures for installation are detailed in Publication C-28. A copy will be forwarded upon request. Address The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.



You can build it better with **ANACONDA®**
THROUGH-WALL FLASHING



Helpful hints on oxyacetylene welding

...by Stainless Sam



1 START WITH CLEAN EDGES, CORRECTLY SPACED

Oxyacetylene gas is more generally used for welding stainless sheets 20 gage and lighter. If used on sheets as heavy as 14 gage, however, butting edges are spaced the thickness of the metal apart. On 16 through 20 gage stainless, edges should be butted together. For gages 22 and lighter, the flange butt weld (without spacing or filler rod) should be used. In all cases, edges to be joined should be free from foreign matter.

2 USE A SLIGHTLY REDUCING FLAME



A neutral flame would prove most satisfactory, but since it is practically impossible to maintain this condition, a slightly reducing flame is advised. Such a flame is recognized by the slightest feathery edge (not more than 1/16 inch) of greenish flame at the tip of the white luminous inner cone. The sketch above illustrates this (but does not show actual colors).

THICKNESS OF METAL	RECOMMENDED ROD (Diameter, Inches)
18 GAGE AND LIGHTER	1/16
18 TO 16 GAGE	1/16 to 3/32
16 TO 10 GAGE	3/32 to 1/8
10 GAGE TO 3/16 INCH	1/8 to 5/32
1/4 INCH AND HEAVIER	3/16 to 1/4

3 THE RIGHT FLUX—AND THE RIGHT ROD—ARE IMPORTANT

Special flux must be used in the gas welding of stainless steels. It comes in dry form, should be mixed with water in a non-metallic container to about the consistency of milk. It may be applied with a small brush. Uncoated or bare rods are used because the reducing flame helps protect the metal from oxidizing or scaling.

4 REMEMBER THESE POINTS ON PROCEDURE



Use a "knitting" back-and-forth motion of the torch instead of the weaving round-and-round motion commonly used for welding mild steel. To get strong, ductile welds free of oxide, avoid puddling the pool of weld metal with the welding rod; hold it in the flame at all times. If possible, complete weld in a single pass.

OXACETYLENE WELDING is only one of the many subjects covered in Armco's fully illustrated shop manual, "Stainless Fabricating Tips." For your free copy, simply get in touch with your nearby Armco Distributor. If you don't know his name, write us at the address to the right.



ARMCO
STEEL CORPORATION



510 Curtis Street, Middletown, Ohio, with Plants and Sales Offices from Coast to Coast • The Armco International Corporation, World-Wide



This is test laboratory Number 39!

It could be right in your own neighborhood . . . one of the typical American homes in which Bryant has a test installation. Here, new features and equipment qualify under actual service conditions, make it possible for you to sell truly *home-tested* heating.

These test homes have helped us to make equipment that is installed easier and faster, more efficient and more economical in operation. Through them, we have developed improvements that make it more profitable for you to *sell* and your prospects to *buy* Bryant automatic gas heating.

There's a Bryant distributor near you, too, with warehouse stock which includes most everything in gas heating, from circulators to furnaces, from water heaters to boilers. At your call, there's engineering aid for your tougher jobs, co-operative advertising assistance for your localized campaigns.

Yes, Bryant meets the test from every standpoint . . . in home-proved equipment, in public preference, in working with you and for you. It's our conviction that the best dealers deserve the best that we can offer.



The most complete line of gas heating equipment in the nation

Bryant Heater Div., Dept. 106,
Affiliated Gas Equipment, Inc.,
17825 St. Clair, Cleveland, Ohio

() Send me the new booklet that tells
the Bryant story. () Have your distributor call on me.



Name _____
Company _____
Address _____
City _____ State _____



The Archives Building, one of the finest buildings in Washington, is protected against seepage by Majestic 3-Way Thru Wall Flashing.

Charity Hospital in New Orleans is one of the outstanding buildings in the South. Here, too, Majestic 3-Way Thru Wall Flashing was used throughout.



On America's Finest Buildings it's...

HUSSEY
MAJESTIC
3-Way Thru Wall

SOLID COPPER FLASHING



By bonding three ways—laterally, horizontally, vertically—Majestic Copper Flashing assures dependable protection for the buildings which must remain leak-proof and free from seepage. Made from solid

16 oz. corrosion-proof Hussey Copper, it is interlocking and easily fabricated for fast, trouble-free installations. A special cutback design makes possible the three-way bonding to the masonry.

Write for a free bulletin which describes Majestic 3-Way Thru Wall Flashing in detail.

C. G. HUSSEY & CO.
(Division of Copper Range Co.)

Rolling Mills and General Offices:
PITTSBURGH 19, PA.

HUSSEY

7 COMPLETE WAREHOUSES

PITTSBURGH.....3850 Second Avenue
CLEVELAND.....5218 St. Clair Avenue
NEW YORK.....140 Sixth Avenue
CHICAGO.....2900 N. Halsted Avenue
ST. LOUIS.....1620 Palmer Boulevard
PHILADELPHIA.....1633 Fairmount Avenue
CINCINNATI.....424 Commercial Square

now! beautiful...new

Pion-Aire

50,000 B.T.U. wall circulator

- Provides 50,000 B.T.U. Input
- Fits 2" x 4" Stud Wall — Studs 16" O.C.
- Requires No Basement or Floor Space
- Air Flow to Each Room Adjustable

AT LAST! Pion-Aire meets your long-felt need for a 50,000 B.T.U. Circulating Unit. Provides homes old and new, motels, stores, offices, with clean, flexible, economical heating. Assures you ready sales, fast installation, a good profit.

NO PITS TO DIG. No cutting of floor or floor covering.

All controls are at convenient hand height. Each quick, beautiful installation builds customer good will that lasts.

PION-AIRE automatically circulates clean, warm air into one or two rooms. Ideal for second floors.

Saves valuable floor space. Economically priced. Thermostatic or manual control. Heating elements guaranteed 10 years against burning or rusting out.

Write **FOR DESCRIPTIVE BULLETIN**

Architects in your area are being told the story. They are specifying Pion-Aire. Get your full share of this new business. See your jobber. Also write us for information about the complete line of Pion-Aire Wall Heaters.



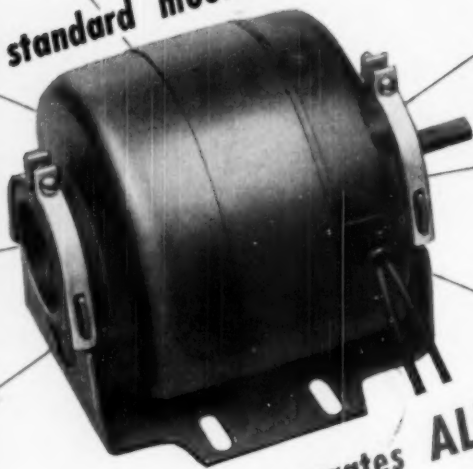
FURNACE CO. 3131 San Fernando Rd., Los Angeles 65, Calif.

Div. of Pioneer Water Heater Corp. • Manufacturers of Pioneer Water Heaters



Choose your mountings

4 standard mountings



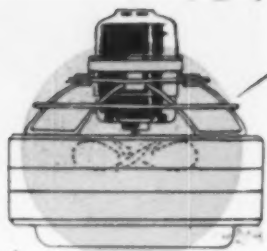
operates ALL ANGLES

NEW

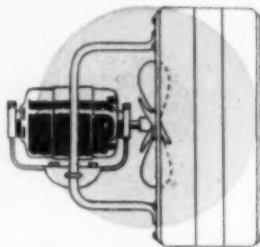
G-E Unit-Bearing Motor for your fans and blowers

Easy for you to mount—easy for your customers to like—this quiet-operating, lifetime-lubricated fractional-horsepower motor. Will operate in any position—especially designed for fans and blowers.

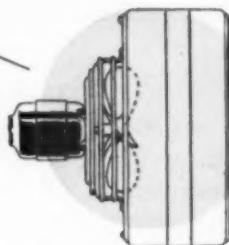
Sizes from 25 millihorsepower to 1/12 horsepower. Adjustable-speed operation possible with suitable control. Provision for easy mounting in any of these methods. More information on this long-lived motor in bulletin GEA-5338. Write now. **Apparatus Dept., General Electric Company, Schenectady, N. Y.**



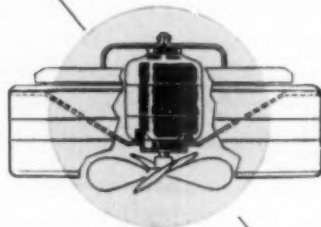
BAND MOUNTING



RESILIENT-BASE MOUNTING



SHAFT-END MOUNTING*



RESILIENT-RING MOUNTING

*Opposite shaft-end mounting also available

GENERAL  ELECTRIC

730-104

Satisfy All Customer Heating Needs

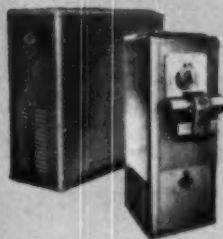
WITH THE *Combustioneer*® LINE OF PRODUCTS



Weigh the Selling Features! They're what pay you profits in any line of heating equipment. Combustioneer has them . . . exclusive features with powerful sales appeal. Look at them, displayed and described here. Then decide that YOU want them . . . let Combustioneer make *easier and faster sales*, for YOU, in YOUR business!



COMBUSTIONEER OIL FURNACES



Up-draft-down-draft principle for maximum efficiency. 10-gauge steel heat exchanger. 20-gauge cabinet. Slip-joint construction. Die-rounded corners. Two doors for blower access and clean-out. Platinum-blue finish. Exclusive Triple-Velocity-Visorhead Burner and Combustioneer Humidifier. BTU input 119,000 to 245,000.

NEW! AMAZING!

COMBUSTIONEER OIL BURNER



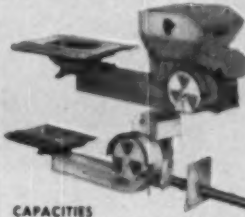
The "peer" among oil burners. Exclusive Combustioneer Triple-Velocity Visorhead. Straight line air delivery. Factory wired two unit safety control. Whisper quiet operation. Can be installed in most all types of furnaces or boilers. Standard equipment in all Combustioneer Oil Furnaces.

COMBUSTIONEER GAS FURNACES



12-gauge steel heat exchanger. 20-gauge cabinet. Slip-joint construction. Die-rounded corners. Two doors for blower access and clean-out. Platinum-blue finish. Multi-jet gas burner . . . plus the famous Combustioneer Humidifier. Gravity, Hi-Boy and Forced Air models. BTU input 85,000 to 150,000.

COMBUSTIONEER BITUMINOUS COAL STOKERS



CAPACITIES
15 TO 1200 LBS. PER HOUR

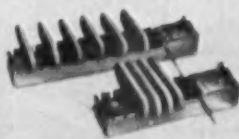
Complete automatic air control with the dependable hydraulic-pneumatic Respirator, which operates without flappers, diaphragms, dampers or shutters in the air duct. Pulsating Gear Drive, which keeps fire-bed poked-up and free-burning. Hopper and bin-feed models. Bin worm sections up to 16 feet with no moving parts under the coal.

NEW ALL-FUEL COMBUSTIONEER FURNACES



ALL-FUEL cast iron winter air-conditioning furnaces that burn oil, gas, coal or coke, made for easy, fast, economical fuel-conversion at any time. Smooth, die-formed, rounded-corner cabinets. Platinum-blue finish. Forced-air and gravity models, complete range of sizes.

COMBUSTIONEER HUMIDIFIERS



EASILY INSTALLED
IN ANY WARM AIR FURNACE

Combustioneer has the exclusive *dual valves*, which are constantly submerged in water for dependable operation without clogging, rusting or corroding. Stainless steel pan which can't corrode. Thick ceramic plates assure free evaporation at all times. Standard equipment on Combustioneer Oil, Gas, and All-Fuel Furnaces.

Write or wire—obtain complete details about Combustioneer selling features. Valuable dealerships open on a direct, factory-to-you basis.
District sales representatives wanted.

COMBUSTIONEER DIVISION
THE STEEL PRODUCTS ENGINEERING COMPANY

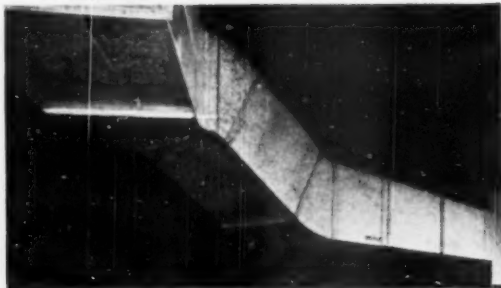
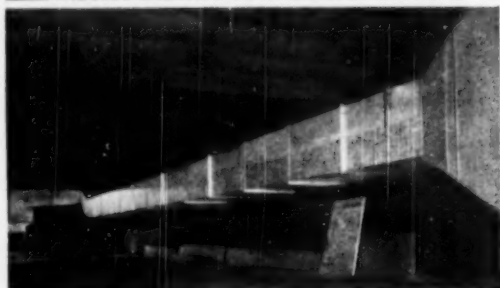
1222 West Columbia St., Springfield, Ohio

Manufacturers of Heating Equipment since 1928

Combustioneer

OIL BURNERS, HOPPER AND BIN-FEED STOKERS,
COAL-GAS-OIL FURNACES, HUMIDIFIERS

**A job worth doing...
is worth WHEELING**



Use Wheeling **COP-R-LOY** Sheets

REG. U. S. PAT. OFF.
THE COPPER ALLOYED STEEL

for finest workmanship at low cost!

Wheeling COP-R-LOY sheets have been the choice of leading metal workers for over 30 years, and with good reason! The great strength, stamina and corrosion resistance of these economical sheets assure extra long life for every building project in which they are used.

Alloyed of refined open hearth metal, COP-R-LOY possesses just the right proportion of pure cop-

per for the strength and malleability that makes it easy to work with. For your finest jobs, always specify Wheeling COP-R-LOY.



**TYPICAL BUILDING PROJECT
WHERE COP-R-LOY WAS USED**



Carlton Beet Sugar Factory, New Brawley, California COP-R-LOY siding was used because hot, arid and corrosive conditions had to be met.

WHEELING CORRUGATING COMPANY • WHEELING, W. VA.

ATLANTA
LOUISVILLE

BOSTON
MINNEAPOLIS

BUFFALO
NEW ORLEANS

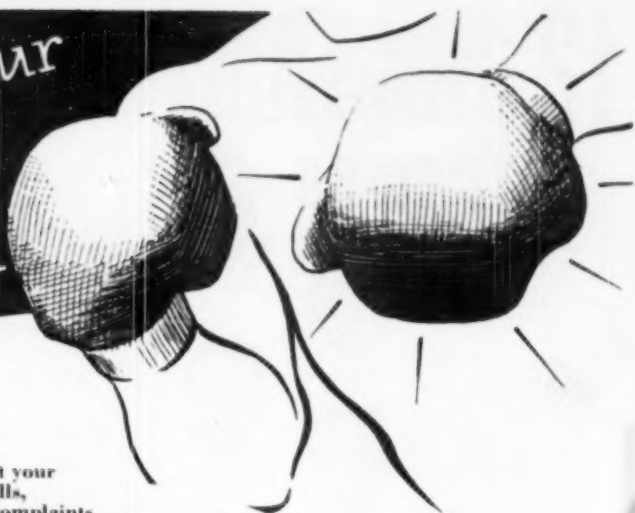
CHICAGO
NEW YORK

COLUMBUS
PHILADELPHIA

DETROIT
RICHMOND

KANSAS CITY
ST. LOUIS

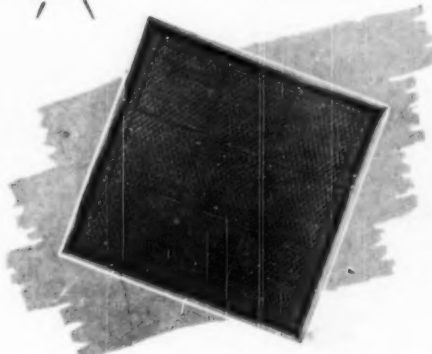
Here's Your **1-2** Profit Punch



THE R-P KLEEN air filter knocks out your problems of distant, scattered service calls, special size filters and any customer complaints on replacement costs. The R-P Fiber Self-Seal filter knocks out your problem of diminishing service profits with the "Save the Frame" system which is tailor-made for any filter replacement program. The R-P "Save the Frame" system reduces filter costs as much as 50%.



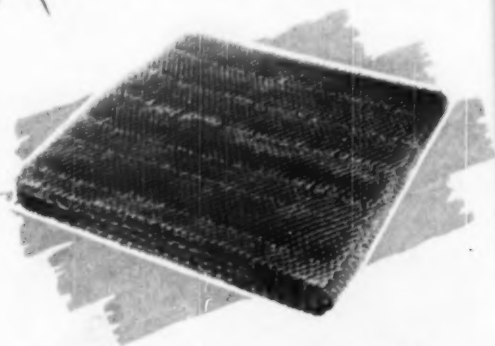
E Z KLEEN AIR FILTERS



The new rust-proof aluminum filter that can be easily washed with a stream of water and re-used. Colorful literature, newspaper ad mats, sales-appealing displays, all available to promote sales and profits. Write for complete information.



SAVE THE FRAME REPLACEMENT PADS



It takes less than a minute to replace a Self-Seal filter pad in the re-usable frame. A coordinated system of reminder mailings and replacement schedules will increase profit margins to new highs! All necessary dealer materials available without charge, write for yours today!

RESEARCH PRODUCT CORPORATION • MADISON 10, WISCONSIN



... PRODUCTS OF RESEARCH

WASHABLE AND REPLACEMENT AIR FILTERS • GREASE FILTERS • EVAPORATIVE COOLER MATERIALS

12 broken-hearted salesmen

We want every wholesaler (and his customers) to know we are working day and night to fill their Lamneck orders.

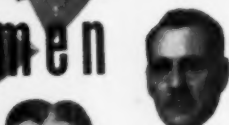
We apologize for delays—and ask them to bear with us.

The labor and money saving features of Lamneck Furnace Pipe and Fittings have added many new heating contractors to the Lamneck family. We are making—and will continue to make every possible effort to justify their confidence by producing and shipping Lamneck to the limits of our ability.



Write for free comprehensive Lamneck Catalog and/or the Air Distribution Institute Booklet "Standardized Fitting"

CLAYTON & LAMBERT MFG. CO., Louisville 10, Ky



Pete C. Priam



Nelson Bushner



William M. Pace



Walter Lamb



J. T. Prout



George Sustad



H. E. Bosch



Clarence Keith



H. B. (Pete) Watts



Claude Forbes



Charles J. Davis



Henry Stephenson

NEW LITERATURE

(Use coupon on page 103)

Air Diffuser Bulletin 348

A new 4-page folder (Bulletin 32) describes how to apply air diffusers in textile plants.

Folder tabulates factors governing atmospheric conditions in textile installations which are essential for manufacture, processing, and preservation of goods, and for high personnel efficiency resulting from comfortable working conditions.

Anemostat Corp. of America, New York, N.Y.

Centrifugal Fan Ventilator 349

A new centrifugal fan ventilator is especially suitable for situations where powered duct exhaust ventilators operating at very low noise levels are desirable. The power unit features a centrifugal type fan with backwardly curved blades, mounted within a weather-proof chamber. Welded steel framework provides sturdy support for the unit which fits over curb built to extend duct rising from building roof.

Fourteen sizes providing nearly 50 capacity variations are listed in Bulletin 341.

The Swartwout Co., Cleveland, Ohio

Sheet Metal Stock Book 350

A new stock book of practical value to sheet metal fabricators and purchasing agents has recently been issued. Complete data is provided on all sheet sizes in all metals, with weights, so that there is no need to figure square feet and compute weights.

An index of colorful plastic tabs classifies the merchant products into eight main divisions. A glance down the list of tabs tells the reader where the information he wants is located.

Stock book also contains helpful technical facts about metals and their special characteristics.

Benjamin Wolff & Co., Chicago 36, Ill.

Electronic Air Cleaner 351

Bulletin 93-815 describes a new Precipitron electronic air cleaner, constructed for upward or downward flow to conserve floor space and simplify maintenance.

Designed to remove dust, dirt, smoke, soot, and other air-borne solids from normal air, the new Precipitron charges the solid particles positively, then passes the air through a set of alternately charged collector plates where the solids are removed by electrostatic attraction.

New unit finds typical use in heating and air conditioning systems, and for oil-mist collection.

Westinghouse Elec. Corp., Sturtevant Div., Hyde Park, Boston 36, Mass.

**SOMETHING TO REMEMBER
WHEN SELECTING A
HUMIDIFIER FOR MODERN
WARM AIR HEATING
SYSTEMS**

ONLY MAID-O'-MIST CONVECTOR-HUMIDIFIERS

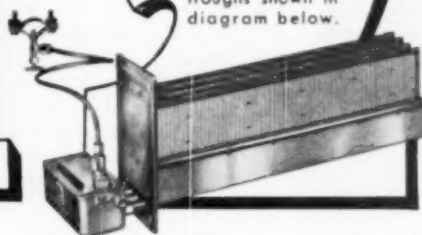
OFFER THESE 3 BIG ADVANTAGES

50% less INSTALLATION TIME!

Just cut out opening in plenum, attach plenum flange frame, slip in factory assembled unit and make water connections — that's all.

30% more EVAPORATING AREA!

Due to unique design of water troughs shown in diagram below.



60% less AIR RESTRICTION IN THE PLENUM!

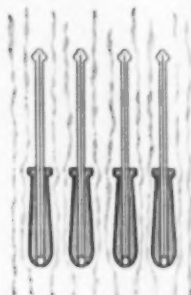
Permits use in small plenums of modern warm air furnaces.

Here's how MAID-O'-MIST cuts air restriction . . . boosts humidity

60% LESS AIR RESTRICTION. The separate, narrow $\frac{3}{8}$ " troughs which hold the evaporator pads are spaced to allow a free flow of heated air between the pads and on all sides. There is no throttling of warm air as it flows through the furnace plenum.

30% MORE EVAPORATING AREA. Every inch of the Humidifier is a working surface which creates more evaporating area.

This fast, continuous humidification is a **MUST** with the short firing periods called for by modern controls.



Available in 13 different sizes!

Maid-O'-Mist Convector Humidifiers have evaporation capacities of 1 to 10 gallons of water per day, depending on size. Made entirely of non-ferrous metal and equipped with automatic (float-operated) supply

valve. You can recommend Maid-O'-Mist to your customers with assurance . . . you can install Maid-O'-Mist with ease, speed and profit. Get full information from your jobber, or write for Bulletin 701-B.



**AUTOMATIC HUMIDIFIERS AUTO-VENTS
WATER LINE CONTROLS . HEATING SPECIALTIES**

MAID-O'-MIST, Inc.

3217 NORTH PULASKI ROAD . CHICAGO 41, ILL.

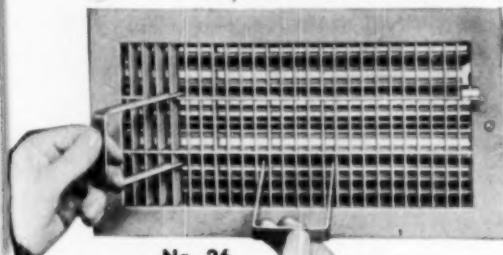
INDEPENDENT

"Fabrikated"
DOUBLE CORE ADJUSTABLE
BAR WALL GRILLES AND
MULTIPLE VALVE REGISTERS

**Each Grille Bar
Adjusted Individually**



No. 25
Adjustable Vertical Front Bars
Adjustable Horizontal Rear Bars



No. 26
Adjustable Vertical Front Bars
Adjustable Horizontal Rear Bars—with
Horizontal Multiple Valves.

Depth with valves closed 1 1/4"
Depth with valves open 2 1/4"

write for
new
catalog no. 50



Always Leading • Always Progressing

**THE INDEPENDENT
REGISTER CO.**

3747 E. 93rd STREET • CLEVELAND, OHIO

NEW LITERATURE

(Use coupon on page 103)

Multi-Room Air Conditioners 352

A new circular discusses air conditioning for multi-room installations with individual room control, features the new remote room air conditioner type AD. Folder is well illustrated with keyed drawings and cutaway views. One full page is devoted to dimensional data. Complete specifications included.

General Electric Co., Bloomfield, N. J.

Rust Preventive 353

An industrial rust preventive is described in a 16-page catalog recently released. Information is given on uses and general exposure and other special conditions which produce rust on machinery and implement finishes, heat resistant and chemical resistant coatings, floor coatings, etc. Sealers for materials other than iron and steel are also featured and color chips are used to show some 70 colors. Specifications indicate resistant qualities, drying time, thinner requirements and methods of application.

Rust-Oleum Corp., Eganston, Ill.

Furnace Sales Helps 354

Five folders describing the new line of Motorstokor warm air and conversion units, for either hard coal or oil, are now available. Units described, which are entirely new, have been under development and test for the past several years. A unique feature of the units is the fact that they can be easily converted from coal to oil or vice versa. Complete specifications and reference data included in each folder.

Motorstokor Div., Hershey Mach. & Fdry. Co., Manheim, Penn.

Stainless Steel in Hospitals 355

The past, present, and future of stainless steel in hospitals is the subject of a new booklet just published.

Entitled Allegheny Metal in Hospitals, new booklet contains information and illustrations of the use of stainless steel from basement to sundeck of modern hospitals. Particular attention is given utilization of stainless in the hospital service, nursing, and surgical departments, and for adjunct diagnostic and treatment facilities.

A unique feature is a check list of more than 800 stainless steel hospital applications.

Before publication, booklet was checked and approved by a leading hospital authority. It is recommended for those interested in hospital construction, maintenance or operation, as well as for fabricators and others interested in hospital and other medical equipment.

Allegheny Ludlum Steel Corp., Pittsburgh 22, Penn.

Good Housekeeping says:

"We give this Seal to no one—the product that has it, earns it!"



**This Seal can make
money for YOU...
every day!**

**Use the coveted Good Housekeeping
Guaranty Seal every day in every contact!**

The buying guide of intelligent American families can now be put to work for you! In each contact you have with your customers or prospects, show this Guaranty Seal and include this phrase: "These automatic controls are guaranteed by Good Housekeeping." Your use of the Guaranty Seal in describing Perflex products will give you a big edge on competition. Every prospect will understand what you

mean... and will have increased confidence in the proposition you are making. Take full advantage of this famous guaranty of "Controls You Can Trust"—use the Seal every day in every contact.

PERFEX
CONTROLS YOU CAN TRUST
PERFEX CORPORATION, MILWAUKEE, WISCONSIN
In Canada, Perflex Controls Ltd., Toronto 1, Canada

AUTOMATIC TEMPERATURE CONTROLS • INDUSTRIAL ENGINE RADIATORS • COLOR PROCESS PRINTS

Which fuel is most popular in YOUR community?

GAS? OIL? COAL?



The ARMSTRONG steel furnace line is complete
... a unit for EVERY need ... for ANY fuel!

When you have a complete selection of steel warm-air furnaces available—for firing with gas, oil or coal, in styles and sizes to meet any installation problem—you don't have to worry about changes in fuel preference among your customers. You're always sure you'll have a unit to suit any changing requirement.

Armstrong offers you exactly that kind of a furnace line—complete in every detail. For gas firing there are forced-air and gravity models, for basement or utility room installation, in sizes ranging from 70,000 to 210,000 Btu input. Oil-fired units include winter air-conditioners—both basement models and hi-boys—with capacities from 72,000 to 200,000 Btu output at the bonnet. Gas and oil conversion burners round out the automatic heating selection, and a complete range of furnace types and sizes—gravity or forced-air, round or square-cased—is available for coal firing.

Every unit in the Armstrong line has good, strong sales features—good, strong performance features—"engineered in." High-efficiency burners, symmetrical heating elements designed for the fuel to be burned, leakproof welded steel construction, fuel-

saving radiators—these are just a few of the points which make it easy to show your customer why an Armstrong furnace will give him excellent service. And from an appearance standpoint—that two-tone blue baked enamel finish always makes a hit with the lady of the house.

Armstrong furnaces save your time, too. Many of the smaller units are shipped completely assembled, in crates which can be carried right into the basement. The larger units are easily assembled on the job—the parts fit well, go together easily.

If you're a retail dealer, visit the Armstrong jobber in your vicinity or write to us for his name. If you're a wholesaler, write now for data on Armstrong Selective Distribution—your territory may be open.

Look to ARMSTRONG for leadership in warm-air heating. A complete line—gas, oil and coal.



NEW LITERATURE

(Use Coupon on Page 103)

Conversion Gas Burner 356

Bulletin No. WAR-2 illustrates and describes a new gas conversion burner. New unit has been tested and listed by AGA under the latest 1950 specifications. Available in a range from 100,000 Btu to 350,000 Btu per hour input.

Williamson Heater Co., Cincinnati 2, Ohio

Sheet Metal Fabrication Booklet 357

Helpful data for designers and shop men is contained in an illustrated, 12-page booklet entitled *In the Shop with Armo Cold Rolled Paintgrip*. Booklet outlines approved methods for fabricating and finishing electrolytically zinc coated and Bonderized sheet metal.

Data obtained through research and observation of plant methods form the basis for recommendations on storing, forming, drawing, welding, cleaning, and painting Paintgrip. Satisfactory drawing lubricants, cleaners, and paints are also listed.

Armo Steel Corp., Middletown, Ohio

Adhesives 358

A new 8-page catalog section on adhesives features a table which lists by number each adhesive company manufactures, the materials for which they are specifically recommended, and the method by which the most effective bond is created.

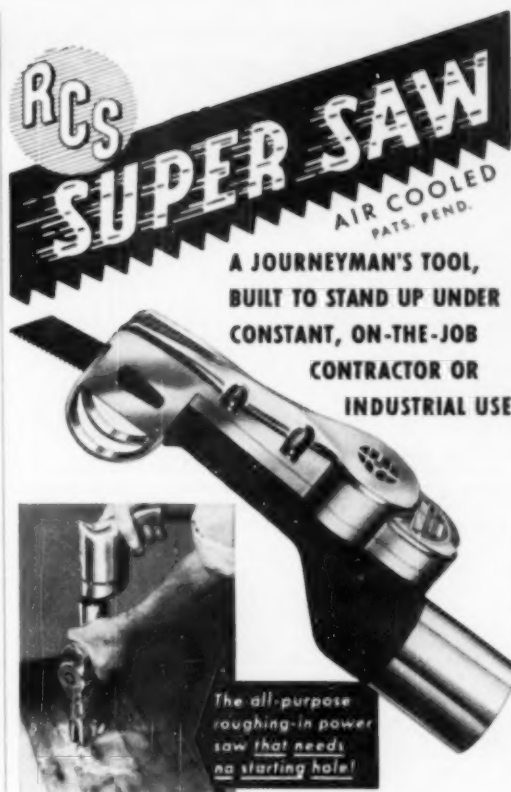
Catalog section also describes each adhesive, cites the recommended uses, tells the method of application, color, drying time, weight per gallon, total solids and thinner used. Also lists the specifications, including those of the army and navy, that it meets.

The B. F. Goodrich Co., Akron, Ohio

Variable Speed Motors 359

Bulletin No. 1601 exhibiting 15 features of the recently developed fractional horsepower U. S. Varidrive motors is off the press. Bulletin features the VA series of variable speed motors and illustrates seven modifications of the design, including three-phase and single phase, combination geared drives and types with flanged bracket for direct connection to the driven machine. Features of the VA Varidrive include a new finger touch control handle, smaller dimensions, 10:1 speed range from 4 to 10,000 rpm, optional positioning of the control dial, knife-edge pointer for accurate selection of speeds, quick removable cover, universal mountings, and positive lubrication.

U. S. Electrical Motors, Inc., Los Angeles 54, Calif.



RCS SUPER SAW
AIR COOLED
PATS. PEND.

**A JOURNEYMAN'S TOOL,
BUILT TO STAND UP UNDER
CONSTANT, ON-THE-JOB
CONTRACTOR OR
INDUSTRIAL USE**

*The all-purpose
roughing-in power
saw that needs
no starting hole!*

● **NO STARTING HOLE NEEDED**... Simply place guide next to material and "rock" tool into an upright position.

● **CUTS RIGHT THRU IMBEDDED NAILS**... wood, plaster, iron pipe, sheet metal, "Transite" and most other materials—even in cramped quarters.

● **FITS ANY HEAVY DUTY 1/4" or 1/2" DRILL**... as easy as changing bits! Overall length only 10 1/4"; weight only 3 lbs. 6 ozs.

● **ANTI-FRICTION REPLACEABLE BEARINGS—BUILT-IN BLOWER**... Blower keeps tool comfortably cool even under continuous use—blows dust and chips away from cutting line. All friction surfaces are of "Oilite," phosphor bronze or high speed ball bearings. All wearing parts are replaceable.

Try it Yourself! See the Super Saw at your jobbers! Inspect it, try it! You'll agree that no other tool offers Super Saw's lifetime construction at such low cost... no other tool provides such drastic reduction in labor costs!

SEND THE COUPON TODAY

R.C.S. TOOL SALES CORPORATION
JOLIET, ILLINOIS, U.S.A.

Gentlemen:

Please send us Bulletin 10A and name of the nearest Super Saw distributor.

Name _____

Address _____

City _____ Zone _____ State _____

Alnor OFFERS YOU FOUR WAYS TO *Save Time ... Save Money!*

Time spent in needless rechecking, balancing and adjusting of heating and air conditioning systems is a waste. It can easily account for much of the cost on every installation and service job.

Here are four Alnor precision instruments that help you do a better job—faster, at lower cost. And like all Alnor instruments—in every industry—the ones shown here are favorites wherever precision and fine craftsmanship are essential.

ALNOR VELOMETER ... is a precision-built, self-contained, portable instrument that gives instant, accurate readings of air velocities anywhere. Needs no calculations or reference charts ... is direct reading. Available in wide scale range. Write for Bulletin No. 2448-G.



ALNOR THERMO-ANEMOMETER ... is a compact, simple instrument for reading air velocities as low as 5 f.p.m. It makes possible fast adjustment of velocities to bring utmost comfort ... efficiency. Drafts within rooms, flow from convectors, air flow in refrigerated spaces—all these and many more are ideal uses for this handy, direct reading precision instrument. Send for Bulletin 913.

ALNOR TYPE 2300 SURFACE PYROMETER ... sets a new high in precision measurement of low surface temperatures. Special design from Alnico magnet to finest, quick reacting thermocouple assures unfailing accuracy ... speed and dependability. Available in 5 Fahrenheit scale ranges with a span as small as 150°. Send for Bulletin.



ALNOR VELOMETER JR. ... ideal for taking a quick, accurate check on circulation and diffusion of air. Sturdily built, carefully calibrated, the palm-sized Velometer Jr. gives instant reading of air velocities without timing, reference charts, etc. Send for Bulletin No. 725.

Alnor

**PRECISION INSTRUMENTS
FOR EVERY INDUSTRY**

Illinois Testing Laboratories, Inc.
Room 538, 420 N. La Salle Street, Chicago 10, Ill.

Send complete information on the following:

- | | |
|------------------------------------|--|
| <input type="checkbox"/> Velometer | <input type="checkbox"/> Thermo-Anemometer |
| <input type="checkbox"/> Type 2300 | <input type="checkbox"/> Velometer Jr. |

Name

Address

City Zone State

NEW LITERATURE

(Use coupon on page 103)

New Hand Tool 360

Folder describes the Impakdriver, a new hand tool for tightening or loosening screws, nuts, and bolts. New tool is particularly useful for starting nuts, bolts or screws that are rusted or frozen on.

Sold individually or in sets with different combinations of bits and sockets for various sizes and types of screws, bolts, and nuts.

H. K. Porter, Inc., Somerville, Mass.

Architectural Grille Catalog 361

Architectural grille catalog and specification book No. 36 illustrates numerous designs of perforated metal grilles from plain lattice to modernistic models which are produced in all kinds of metal in most cases to thicknesses of 1/4 in. Also illustrated are various types of air conditioning grilles, registers, ceiling outlets, and special fabricated grilles.

Diamond Mfg. Co., Wyoming, Penn.

Gas and Oil Fired Equipment 362

Folder illustrates and describes a new line of gas furnaces. Units are completely assembled and wired, ready to connect to gas lines.

A second folder covers the manufacturer's line of suspended oil fired unit heaters. Heaters are built with both propeller fans and sirocco type blowers, are especially suitable for service stations, factories, warehouses, etc.

Auburn Burner Co., Auburn, Ind.

Stud Welding 363

A 16-page illustrated booklet reprinting the chapter on Stud Welding from the third edition of the Welding Handbook, recently published by the American Welding Society, is currently available.

The article explains the stud welding method of fastening, describes the equipment and its principal uses, and gives stud locating procedures and other data.

Nelson Stud Welding Div., Morton Gregory Corp., Lorain, Ohio

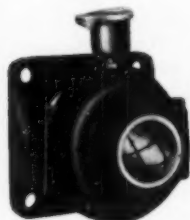
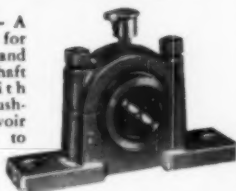
Repair Parts for Heating Equipment 364

A 204-page catalog of repair and installation parts for automatic heating systems contains illustrations, wiring diagrams, and data tables. Covers parts for oil burner, gas, and stoker installations, for both current and obsolete models.

Address requests on business letterhead to
Sid Harvey, Inc., Valley Stream, N.Y.

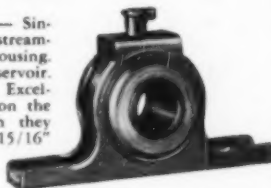
**THERE'S A
RANDALL
PILLOW
BLOCK
FOR EVERY TYPE
APPLICATION**

Normal Duty Pillow Block — A general service pillow block for normal duty on small shafts and for heavier duty on larger shaft sizes. Double-lubricated with graphited, phosphor bronze bushing in wool packed oil reservoir housing. For shafts $1\frac{1}{4}$ " to $3\frac{15}{16}$ " inclusive.



Flange or Side Mount Pillow Block — A top quality pillow block built for the most exacting service. Double-lubricated with graphited phosphor bronze bushing in wool packed oil reservoir housing. This pillow block is widely used in unit heaters, cabinet type air conditioning units. Side mounting only. For shafts $\frac{1}{2}$ " to $1\frac{15}{16}$ " inclusive.

Sintered Bushing Series — Sintered bronze bushings in streamline one-piece steel housing. Wool packed oil reservoir. Mounts in any position. Excellent for general service on the smaller shafts for which they are available, $\frac{1}{8}$ ", $\frac{3}{4}$ ", $1\frac{5}{16}$ " and 1".



Write for catalog No. 49.—For additional information on these as well as other one piece or two piece pillow blocks available for light, normal or heavy duty. There's a Randall Pillow Block for every type application.

PILLOW BLOCKS
BUSHINGS
BAR STOCK
SHEET LUBRICATOR



GRAPHITED BEARINGS
THRUST WASHERS
RABBITS
SAFETY COLLARS

RANDALL GRAPHITE BEARINGS, INC.

207 E. MARKET STREET

LIMA, OHIO

**SO WHAT!
I HEAT THE
LO-BLAST
WAY**



**GREATER EFFICIENCY OF LO-BLAST
POWER-TYPE GAS BURNER CUTS
HEATING COSTS
AS MUCH AS 10%**

DEALERS!

Cash in on the exclusive
sales features of the Lo-BLAST
Economite! Write today for
complete information.



**LO-BLAST
ECONOMITE**

The same design features that make the standard Lo-BLAST famous for efficiency are now available in a residential size burner—the Lo-BLAST Economite!

Power burner design assures perfect combustion, regardless of draft—a proved fuel saver—safe and efficient for down-draft units. No "pop" when the Economite goes on and off—burns so smoothly you can't tell it's running.

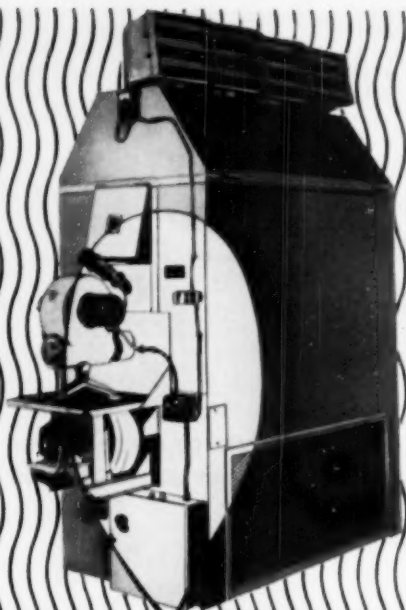
Every Economite is factory-tested on gas and shipped assembled—fully equipped with foolproof safety. Simplicity of design and durable construction reduce service to a minimum. Two sizes provide a capacity range of from 75,000 to 300,000 BTU.



The standard Lo-BLAST—capacities to 20,000,000 BTU.

**MID-CONTINENT
METAL PRODUCTS CO.**

1960 N. Clybourn Ave., Chicago 14, Ill.



Heating Surface

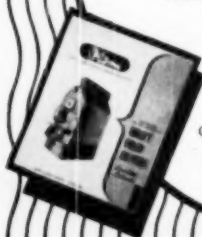
... Long life and maximum efficiency depend on the amount of heat transfer surface. Olson, through the use of standard 10 gauge, 4" O. D. boiler tubes, gives even more effective heat transfer surface than the highest recommendation of accepted heating authorities.

Olson

ARTHUR A. OLSON & COMPANY
Broad Street, Canfield, Ohio

DIRECT FIRED HEATERS
Gas, Oil, Coal
or Dual Gas and Oil

Get the inside story
Write for catalog
No. F50HL



SALES SENSE

By Jack Bedford

Any live wire would be dead without connections.

\$ \$ \$

Salesman Sam said, "My wife and I have words—but I never get to use mine."

\$ \$ \$

Some salesmen wish there was some other way of starting the day than waking up.

\$ \$ \$

Salesman No. 1: "How long have you worked for the company?"

Salesman No. 2: "Ever since the boss threatened to fire me."

\$ \$ \$

Heard about the farmer who got a letter from the insurance company stating that since his barn burned down the company would build another barn just like it. In reply the farmer wrote: "If that is the way your company does business, you can cancel the insurance on my wife."

\$ \$ \$

Salesmen can learn from the school of experience, but they shouldn't expect any recesses.

\$ \$ \$

Why is it that so many wise salesmen are working for so many dumb clucks?

\$ \$ \$

"I discovered at an early age," reported a successful salesman, "That the difference between average salesmen and top producers can be explained in three words. These top ranking salesmen do what is expected of them—and then some. Three little words—and then some—yet they spell the difference between success and just getting by."

\$ \$ \$

"Love is blind," observed the Salesman's Sage, but marriage is the eye opener."

\$ \$ \$

The older generation thought nothing of getting up at 5 o'clock—the younger generation doesn't think much of it, either.

\$ \$ \$

There is only one person who enjoys waiting for service—that's the fellow who has an appointment with the dentist.

\$ \$ \$

Salesmen know that time is money, but they also know that banks won't accept it on deposit.

\$ \$ \$

In selling, a person's name counts. When a salesman uses a customer's name he is making sales, making friends, and applying real Sales Sense.

\$ \$ \$

Noticed the following sign outside a church announcing the Sunday's sermon: "Do you know what hell is?"

Below this in smaller type was this message: "Come in and hear our new organist."

**FOR
NEW
FURNACES**

**FOR
FURNACE
REPAIR**



**"Tops"
IN HEAT RESISTANCE
AND ADHESION . . .**

THARCO has successfully withstood temperatures up to 2500° at Detroit Edison and for long periods — that's nearly 50% higher than normal warm air furnace temperatures.

THARCO seals BOTH sides of the joint — gas-tight, smoke-tight — yet it's resilient enough to care for all normal expansion and contraction . . . and, Mister, it STAYS PUT permanently, thanks to the secret Armstrong formula!

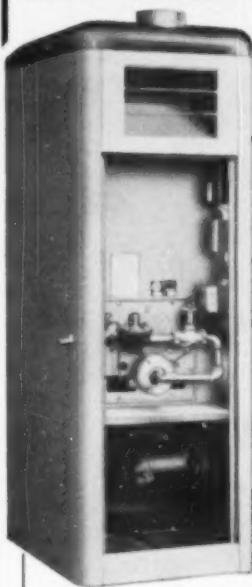
THARCO Asbestos Furnace Cement comes in 1-lb. to 350-lb. metal containers — ready to use. See your jobber, or write us today for complete information.

**THE
ARMSTRONG
COMPANY**

4065 SOUTH LA SALLE STREET, CHICAGO
241 SOUTH POST AVENUE, DETROIT
2411 SWISS AVENUE, DALLAS



HI-BOY or LOW



*handles
any
forced
air
problem*



The remarkable new

SECURITY

MODEL SFA FURNACE

Security leads the trend to compact efficiency with the new SFA Series. Adaptable to every domestic winter air conditioner situation. Versatile enough for conventional, basementless or utility room installations. Completely engineered for effortless, automatic heating. Yes, sir . . . the SFA brings greater economy and longer life to home heating!

Only Two Connections Necessary

Completely assembled at factory. Hook up just one gas and one power line! Filter racks optional at bottom, right or left. Each control can be removed without disturbing other wiring. You'll be amazed at its versatility. Available for all gases. Write or wire now for complete information, prices.

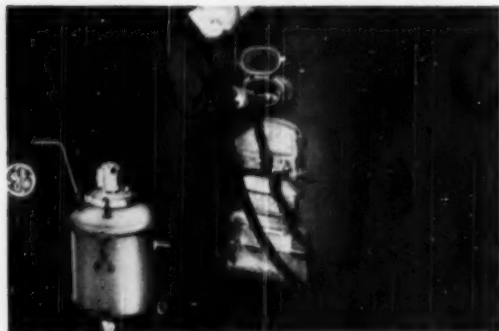
SECURITY MFG. CO.

1630 Oakland St., Kansas City 3, Mo.

Also manufacture the famous Security Heavy Duty Water Heater and full line of Gravity, All Purpose, and In A Wall Furnaces and Conversion Burners.



Here's Modern Equipment to MAKE FURNACE-CLEANING CALLS PAY OFF!



G-E AVI P908 FURNACE CLEANER a Powerful BLOWER SUCTION Machine—engineered to do the job Quickly, Thoroughly and at Low Cost

This easy-to-handle, high-vacuum cleaner (1 full h. p. AC/DC; 43" water lift; weight only 51 lbs.) makes a bit with clean-up crews... steps up their productiveness... leaves boilers and cellars cleaner.

Power unit is readily removed from tank and converted into a powerful BLOWER, by removing bag and substituting special coupling and guard.

G-E CHIMNEY CLEANING AND
AIR DUCT EQUIPMENT
For Use with Model AVI-P908
Furnace Cleaner

Another ingenious contribution to speed clean-up jobs is the G-E Chimney-Cleaning Set. This equipment brings down the soot and gets it into the machine with a minimum of fuss. Revolving handle and vacuum hose fit through special shield which keeps falling soot from escaping into the cellar. As shown, set includes Shield, Crank, Chimney Flue Brush, Duct Brush and eight 4 ft. extensions.

YOUR FIRST STEP toward
Lower Furnace Cleaning Costs and MORE
Satisfied Customers is taken when you mail
coupon below for this new G-E folder



Furnace and Boiler Cleaners

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, Dept. 22-4115
1285 Boston Ave., Bridgeport 2, Conn.

Certainly, I'm interested in more efficient Furnace Cleaning Equipment. Send the G-E Folder by return mail.

Name _____

Firm _____

Address _____

City _____

Zone _____

State _____

INDUSTRY ITEMS

THE KALAMAZOO STOVE & FURNACE Co. recently introduced its new Kalamazoo convertible heating unit to its dealers in a series of meetings held in fourteen Eastern and Mid-Western states. W. S. Mollering, sales manager—heating division and Paul Barthold, chief heating engineer, conducted the meetings and described the outstanding sales and engineering features.



Kalamazoo Meeting

The new Kalamazoo convertible will burn either oil or gas. After being originally installed to burn one fuel it may be quickly converted to burn the other fuel by using an inexpensive conversion kit.

The new model is available in five sizes of oil fired units rated from 81,500 to 135,500 Btu and in four sizes of gas fired units rated at 75,000 to 140,000 Btu.

Also shown at the meetings were the new and improved oil and gas hi-boy winter air conditioners.

JAMES J. LEE, vice president in charge of sales at Automatic Firing Corp., St. Louis, Mo., has announced the appointment of F. J. Hollerbach as sales manager for the firm. Mr. Hollerbach has extensive experience in sales and promotion of gas equipment and air conditioning equipment.

A graduate of the University of Detroit, Mr. Hollerbach was sales manager of El Van Oyro, a Detroit corporation, and for several years was manager of the heating division of Sears, Roebuck & Co. in Michigan. He was eastern district representative for Automatic Firing Corp., in 1946 and 1947.

He will devote most of his time to developing sales merchandising plans with dealers and in awarding franchises throughout the country.

Peerless Gas and Oil Thermejector Furnaces

For Automatic Heat



Thermejector Gas
or Oil Enclosed Model

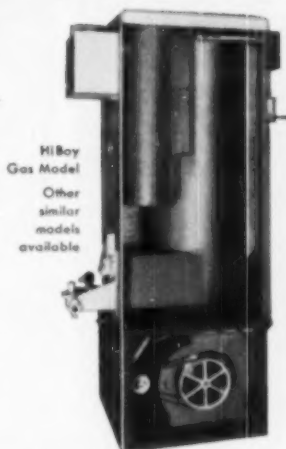
Designed and engineered for natural, mixed, and manufactured gas—approved by American Gas Association.

An efficient oil burning unit that will give your customers years of trouble free heating comfort with maximum heat from less fuel.

These PEERLESS Thermejector furnaces are our new fiftieth anniversary models. Experience plus constant research and developments offers you the most efficient heating equipment on the market today.

For safety, beauty and economy, every PEERLESS unit in our complete line of warm air furnaces is designed and engineered to give your customer perfect satisfaction.

Write today for new descriptive literature just off the press which will give you information and specifications of our complete line of all steel furnaces, for gas, oil and coal.



HiBoy
Gas Model

Other
similar
models
available

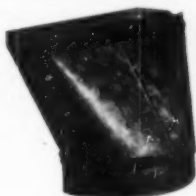
PEERLESS FOUNDRY CO.

1853 LUDLOW AVENUE
INDIANAPOLIS 7, IND.

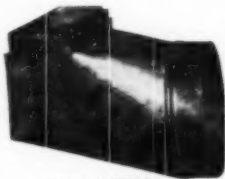
Pioneers in Warm Air Heating for half a century



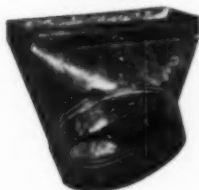
No. 112 BOOT



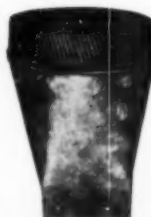
No. 110 BOOT



No. 113 BOOT



No. 111 BOOT



← No. 164 End of
Line Center Takeoff.
For use with 2 No.
163.

No. 160 Takeoff Round
Pipe to carry branch
in or below joist. →



GRAY "Snap-Rite"

FURNACE PIPE AND FITTINGS AIR CONDITIONING PIPE AND FITTINGS

A complete line of Gravity and Forced Air Pipe and Fittings with our positive "SNAP-RITE" Lock for quick assembly and erection. Wall Stack and Fittings in 3 1/4" standard depths. Trunk Pipe and Fittings in 8" standard depths.

Write for Catalog

GRAY METAL PRODUCTS, INC.

30 Carlton Street

Rochester 7, New York

NATIONAL LOCK HARDWARE

FOR USE ON METAL

DISTINCTIVE... DURABLE... DESIGNED ESPECIALLY FOR
AIR CONDITIONING EQUIPMENT • HUMIDIFIERS • STOKERS •
SPACE HEATING UNITS • OIL BURNERS • GAS HEATING UNITS



Positive Latching Action... Easily Applied

Tutch Latch fits right into your production picture. It's easily applied to metal surfaces... saves time on the assembly line. This quality latch opens doors automatically with touch of wrist, arm or elbow. Unique design assures easy positive action... long life.



ROBERT L. GRAY, left, of Bar Harbor, Maine, recently became the 7,000th student to attend the Williams Oil-O-Matic oil burner installation and service school in Bloomington, Ill.

Above, Ken Johnson, director of training, and F. O. Robison, right, manager of Oil-O-Matic national service division, demonstrate one of the first Oil-O-Matic burners manufactured in 1923, the low pressure Model G.

Conducted by the Eureka Williams Corp., the school has been attended by oil heating equipment students from every state in the nation and many foreign countries during the last 23 years.

In addition to covering every phase of oil burner installation and service, students are informed of the latest engineering developments almost as soon as Eureka Williams research experts know of them.

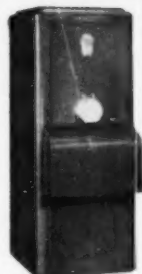
Particular instruction emphasis is placed on correct heating units to fit different types of homes. Proper methods of adjusting burners to local weather conditions for maximum economy and efficiency of operation also are stressed.

MAID-O'-MIST, Inc., Chicago, Ill., recently announced the appointment of Norman F. Sorgenfrei as assistant manager of sales.

Mr. Sorgenfrei has a background of 15 years of experience in the heating industry, having held key positions in the sales and engineering departments of several leading manufacturers.

The company also announced the appointment of two new representatives. The Paul Simmons Co., 912 Commerce St., Dallas, Tex., will represent the company in eastern Texas. H. E. Culley, 419 Main St., Louisville, Ky., will serve as representative in the states of Kentucky and Tennessee.

HESS



Here's what
the **HESS** name
means to dealers
and heating
contractors:

1. A COMPLETE LINE

Warm air units for *any* fuel: gas, oil or coal — forced air and gravity circulation. There's a HESS furnace for practically *every* warm air heating application. Forced air units for gas and oil are featured in gleaming *white* baked enamel finish — modern, eye appealing beauty harmonizing with other household appliances.



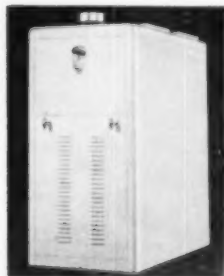
2. FAMOUS HESS QUALITY

All HESS units incorporate exclusive design and structural features that have made HESS furnaces famous since 1875 for *high efficiency, long life and maximum customer satisfaction*. New refinements and modern styling add to the traditionally famous qualities of HESS Equipment.



Here's a complete line for you — from one reliable old-line manufacturer who has made heating its business since 1875.

Write today for details.



The Hess Company

132 N. CLINTON ST. CHICAGO 6, ILL.

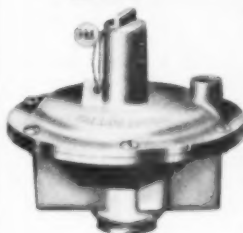
SINCE 1875

OUR 77th YEAR

THERMAC

appliance REGULATORS

Simplicity of
Design—your
assurance of
Dependability



Certified by



Fool-proof design in an appliance regulator means to the customer and dealer fewer service calls. We believe Thermac "TR" Series Regulator is the simplest design possible, consistent with highest performance characteristics.

Thousands of Thermac Regulators have been in operation 15 years and more without service. Insist on Thermac for best in design, for accurate pressure and flame control, for high capacity and low maintenance cost.

Sizes 1/4" to 2 1/2" IPS.

THERMAC

COMPANY

800 East 108th Street, Los Angeles 2, Calif.
"20 Years Experience in Building Gas Controls"

try
the
simpler
way—
just use



hardened

MASONRY NAILS

for making fastenings to
brick, mortar, concrete, etc.



You'll save work, as well as time and money by using P-K® Hardened Masonry Nails. Just hammer them in—they hold securely, and are easier, quicker, and cheaper to use than expansion bolts, lead anchors and plugs, and similar devices.

In comparatively soft masonry they can be driven without the necessity of drilling lead holes. For hard masonry, make pilot holes with a P-K Masonry Drill.

First time you try them, you'll agree that P-K Masonry Nails are the job-speeders you've been looking for. Available everywhere through accredited Distributors. Remember . . . IF IT'S P-K, IT'S O.K.

PARKER-KALON® FASTENING DEVICES

Makers of the Original Self-tapping Screws

Write for this folder



Gives sizes, punch information, full instructions for use. Tells you the many ways Masonry Nails will help you save time and money. Parker-Kalon Corporation, 200 Varick Street, New York 14, N. Y.

TRADE MARKS REG. U.S. PAT. OFF.



Silver Line

SAWS

SIX SIZES—BLADE CAPACITIES TO 12"

SAFER—EASIER TO HANDLE
FAR MORE POWERFUL!



1 SAFETY-LOCK SWITCH—positive protection against accidental starting.

2 EXTRA WIDE REINFORCED STEEL SAFETY BASE for better balance—easier to handle, safer to use.

3 LONG-SHAFT TRANSVERSE MOTOR MOUNTING transmits as much as 25% extra power, supports blade on oversize ball bearings from one side of the tool clear to the other.

4 UNIQUE SHOCK-ABSORBER GEARING harnesses the added power of these great new saws, gives extra life to motor, gears, spindle and blade.

5 PROTECTED DEPTH AND BEVEL SCALES. In plain sight when you use them—out of the way when you don't. Always accurate.



INDEPENDENT PNEUMATIC
TOOL CO.
AURORA, ILLINOIS

Write Today
For Free
Electric Tool
Catalog E-2



Belt Sanders
Bench Grinders
Drills
Drill Stands
Fender Hammers
Grinders
Electric Hammers
Impact Wrenches
Nailer
Nut Setters
Polishers
Sanders
Saws
Screw Drivers
Tappers
Valve Refacers
Valve Reseaters
Air Tool Kits

GENERAL CONTROLS, Glendale, Calif., manufacturers of automatic pressure, temperature, level and flow controls, announces four new appointments to their staff of sales engineers. Jack Ray, vice president in charge of sales reports the assignment of William C. Stringfellow to the Dallas branch office; Hamilton G. Sudler to New York, Ernest F. Bruegel to Philadelphia and R. Roedder to Los Angeles. General Controls now operate 23 direct factory branches from coast to coast.

MARKING 15 YEARS OF SERVICE to the heating and air conditioning trade, the Viking Air Conditioning corporation, Cleveland, Ohio celebrated its anniversary with a family-style party and open house on Friday, August 4. Over 325 employees and their guests turned out for the festivities.

Coincidentally, the anniversary date was also the birthday of Viking's founder and president, Marion L. Levy.

In the afternoon, the employees' families were shown through the plant and the corporation's new offices on a tour of inspection. Many of the older employees' families were pleasantly surprised to see how the company had grown in the past few years.

In the evening following the tour, the group enjoyed a buffet-style dinner in the dining pavilion of a popular private park. During the presentation services which followed Mr. Levy was presented with a plaque from the employees which read "In appreciation of 15 years



Mr. Levy cuts the cake.

of inspired leadership" and a watch inscribed "M. L. L. 1935-1950, Viking employees." Mr. Levy also received a television set while Mrs. Levy was given a corsage of orchids.

John Tobin

John Tobin, district representative for Hall-Neal Furnace Co., Indianapolis, Ind., was killed in an automobile crash on Tuesday, Sept. 12. He was 31 years old.

Mr. Tobin had been associated with Hall-Neal for about a year. A native of Indianapolis, he had attended Indiana University.



PORTABLE TEMPERATURE RECORDER . . .

Indispensable for SALES, INSTALLATION and SERVICE



"Very useful for selling installation jobs."

"Makes it easy to check proper thermostat location."

"Gives me proof of a good installation."

"Very satisfactory for recording outdoor temperature for 'degree day' operations."

"Used all the time for balancing heating systems."

"Has been invaluable as proof in settling heating complaints."

"Helped me discover incorrect 'night set-back' of clock thermostat in seconds instead of hours."

The **TEMPSCRIBE** Temperature Recorder gives continuous time-temperature records of room temperature or of air temperature at any specific point, such as at the thermostat, at floor and ceiling levels, and above the radiators or in front of warm air registers. The temperature graph, as recorded on a 4" chart, shows at a glance the highest and lowest temperature during the test period, duration of any temperature extreme, and frequency and spread of temperature fluctuations. The instrument is compact, self-contained; no electrical connection; requires no watching. Can be stood anywhere or hung on wall. Available in ranges to cover -30° F. to +160° F. temperatures. Choice of spring wound chart drives: 8 hour, 24 hour, or 7 day rotation.

BACHARACH INDUSTRIAL INSTRUMENT CO.
7000 Bennett Street • Pittsburgh 8, Pa.

Ask your jobber about TEMPSCRIBE Recorders, or mail coupon for Bulletin 720

Bacharach Industrial Instrument Co., 7000 Bennett St., Pittsburgh 8, Pa.

Send Bulletin 720 on TEMPSCRIBE Recorders to:

Name

Company

Street

City and State

We are: ☐ DEALER ☐ JOBBER ☐ MANUFACTURER



E. G. Spall



M. Bowman

E. G. SPALL (left), president and general manager of Perfex Controls, Ltd., Canadian division of the Perfex corporation of Milwaukee, is announcing a new manufacturing plant located at Guelph, Ontario as the first step in a Perfex three-point expansion program. Murray Bowman (right), vice president in charge of sales, will head the Perfex sales office at 73 Simcoe St., Toronto. A leading manufacturer of automatic heating controls, Perfex supplies its controls to heating dealers and jobbers as well as to manufacturers of domestic automatic heating equipment for use with oil, gas and coal in Canada and the United States.

RHEEM MFG. Co. has appointed Veal J. Heinis national sales manager for space and central heating products. Mr. Heinis will continue to make his headquarters at Rheem's Chicago plant, where recently expanded facilities are now in volume production of the company's new gas heating line.

Until recently assistant appliance sales manager for Rheem's central region, Mr. Heinis has been identified with the heating business and related fields for 15 years. He joined the Rheem organization in 1946 as a salesman at Chicago. Early in 1948 he was named manager of heating sales for the central region, and he has been active since then in the development of the company's present heating program. He became assistant regional appliance sales manager in October of last year.

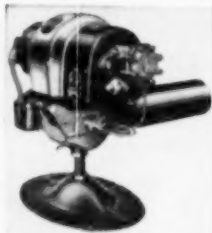
COMBUSTIONEER Division, Steel Products Engineering Co., Springfield, Ohio, are currently announcing a new line of gas furnaces. The new units consist of gravity, forced air and hi-boy models with an input range from 85,000 through 150,000 Btu. All units have been tested and approved by AGA for natural, manufactured, mixed and LP gases.

All Combustioneer gas furnaces feature a 12 gauge steel heat exchanger. Cabinets are made of 20 gauge steel and feature die-rounded corners and slip-joint assembly. Also incorporated in all models is a clean-out opening in the lower front section of the radiator.

THE BOSTON DISTRICT OFFICE of the Penn Electric Switch Co., Goshen, Ind., has been moved to 313 Washington St., Newton 58, Mass.

Penn Electric Switch Co. manufactures a complete line of controls for heating, refrigeration, air conditioning, engines, pumps and air compressors.

MORE HEAT from LESS OIL with CENTURY'S FUEL-SAVING FIRING HEAD



Models: 01 and 02

It's easy to Sell these Advantages!

- Fuel economy through better combustion — cleaner fire.
- Easy adjustment for any draft condition.
- Fewer Service Calls.
- Burns all types of domestic heating oil.

Write today for literature . . .
or ask to have a salesman call

the newer catalytic fuel oil that is so high in heat units . . . but, ordinarily, so hard to burn.

CENTURY'S new fuel-saving Firing Head is standard equipment on CENTURY Winter Air-Conditioners and Boilers as well as on Conversion Burners up to 5 G.P.H. capacity.

Start now to Profit with CENTURY'S Complete Line of Automatic Heating Equipment

CENTURY Winter Air-Conditioners (85,000 — 380,000 BTU — Utility and Basement Models), Boiler Burner Units (380 — 740 sq. ft. of radiation); Convertible Winter Air-Conditioners (60,000 — 180,000 BTU — Gas Burner, Gun Burner, Vaporizing Burner); Oil-Fired Conversion Burners (1/4 — 20 G.P.H.), Gas Conversion Burners (87,000 — 250,000 BTU).

CENTURY ENGINEERING CORPORATION
MAIN OFFICE & FACTORY • CEDAR RAPIDS, IOWA

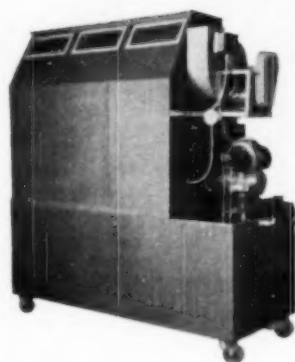
COMPLETELY PACKAGED
OIL BURNING
MOBILE SPACE HEATER

**NATIONAL
CHAMPION**

DIRECT FIRED

Portable
HEATING UNIT

EFFICIENT
AND
CONVENIENT



*Just
Plug
It
In*

300,000 TO 1,800,000 BTU

A complete, self-contained portable unit providing immediate heat delivery when and where it is needed. Ideal as temporary, emergency and standby heaters meeting many definite needs for more adequate heating methods in such places as warehouses, garages, industrial plants, hangars and storage areas.

These units are completely assembled, wired and flame tested at the factory and ready for immediate use. They are complete with motors, blowers, burner, induced draft blower, directional discharge louvers, and self contained fuel tank with same design in construction that have created high recognition to the National line of space heaters.

Heater No.	B.T.U.	CFM	Motor HP	Shipping Weight
P. 300	300,000	5,000	1	1400
P. 500	500,000	7,000	2	1600
P. 800	800,000	10,500	3	2060
P. 1200	1,200,000	15,000	5	2900
P. 1800	1,800,000	23,000	7 1/2	3800

SEND FOR BULLETIN NO. 601

NATIONAL HEATER COMPANY
2182 CLORA AVE.
SAINT PAUL 4 MINNESOTA

Look! So Easy with
WISE-GRIP
Sheet Metal Tool

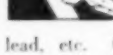


Eliminates Tiresome
Hand Gripping



**LOCKS
to Work**

**DEEP
THROAT**
Up to 1 1/2"



Boy! What power! Just close your fist and jaws **LOCK** to work with tremendous non-slip grip. Eliminates hard, tiresome hand gripping. Easily released. Or adjusted to non-locking action. For speed, ease of operation and extra ruggedness VISE-GRIP can't be beat.

1000s OF USES!

Tops in a hand tool for on-the-job work or as all-round shop tool. Better than any other for bending, forming, seaming, crimping or straightening sheet metal... holding templates, holding sheet metal for soldering, working inside stacks, bending lead, etc. Guaranteed by the makers of VISE-GRIP Wrenches. 8 inches long. Jaw width 3 1/8 inches. Throat depth 1 3/4 inches. No. 8 — 8-in.\$2.95.

Order from your supplier.

Manufactured **WISE-GRIP** Only By
PETERSEN MFG. CO., INC.
Dept. AA-10 DeWitt, Nebr.

For Today's Best Value

COMPARE

- ✓ FEATURES
- ✓ PERFORMANCE
- ✓ REPUTATION
- ✓ SALES HELP



*then finally price
and you'll
settle on*



Because they are built by one of the world's oldest and leading oil burner manufacturers.

Because they are endorsed and specified by architects, engineers, builders, realty managers, Federal, State and City departments everywhere.

Because they are used by banks, schools, churches, institutions, apartment houses, commercial buildings and thousands and thousands of satisfied home owners to whom operation of Sun-Ray burners has meant years of care-free, economical heating.

Because with our sales literature, newspaper mats, displays and signs we help you sell more Sun-Ray Burners more profitably.

Inquiries Invited from Furnace and Boiler Manufacturers

Sun-Ray Models from 0.7 to 25 g.p.h.



SUN-RAY BURNER MFG. CORP.

139-34 QUEENS BLVD.

JAMAICA 2, N. Y.

How to *SAVE TIME* in *INSTALLATION*



Z-Z-ZIP THROUGH SHEET METAL

CUTTING JOBS with fast, powerful Van Dorn Electric Porto-Shears! Cut sheet metal too tough for snips. Speed up jobs where snips are slow. Cut straight lines, irregular lines, curves to a minimum radius of $\frac{3}{4}$ "—with the cutting action *always visible!* Reduces operator fatigue while improving work. Three models: 12, 16 and 18 gage capacities.

*Trade Mark Reg. U. S. Pat. Off.



DRILL HOLES FASTER IN BRICK, CONCRETE

with hard-hitting, high-speed Van Dorn Electric Hammers. Drive a wide variety of tools—including star drills, speed bits, chisels—with thousands of sharp, positive hammer blows per minute. Require no transformer or extra equipment. Light, compact, completely self-contained. Operate from A. C. or D. C. outlet, or portable generator. Four models: rated by drilling capacity in concrete for $\frac{1}{2}$ ", $\frac{3}{4}$ ", $1\frac{1}{8}$ ", 2".

CALL YOUR NEARBY VAN DORN DISTRIBUTOR

for a profitable demonstration of these cost-cutting tools. Write for free catalog to: **THE VAN DORN ELECTRIC TOOL CO.**, 782 Joppa Road, Towson 4, Maryland.

**FOR POWER
SPECIFY**

**PORTABLE
ELECTRIC**

**"Van
Dorn"**

TOOLS

(Div. of Black &
Decker Mfg. Co.)

DRILLS • SANDERS • BENCH GRINDERS • SCREW DRIVERS

RIGHTS FOR THE MANUFACTURE and sales of Propaire air-moving equipment have been acquired by Wilbur E. Ludwig and M. E. Smalley. The partnership to be known as Propaire Mfg. Co., located at 221 Locust St., Genoa, Ill., will produce and distribute this line of multi-blade blowers, exhausters, wheels, fans and other air-moving equipment.

The Propaire line was formerly produced and distributed by the late Raymond J. Scheffler, proprietor of the Grand Rapids Die and Tool Co., Grand Rapids, Mich. This company was dissolved by federal court order in 1949.

Distributorships are now being appointed by the company.

E. LEE MERRILL, president of the C. L. Bryant Corp., has just announced the opening of the new C. L. Bryant Sphinx furnace factory located on East 79th Street in Cleveland, Ohio. Set up on a modern assembly line basis, this new plant now gives Bryant more than four times its former production capacity. Newly designed gas and oil gravity and winter air-conditioning furnaces are on the way to dealers and distributors in increasing quantities.

The original Bryant plant, located at 4610 St. Clair Ave., is now devoted entirely to the manufacture and assembly of Sphinx Custom-built round and sectional gas conversion burners and the sphinxette gas conversion burner.

J. N. CRAWFORD, director of sales, Bryant Heater Division, A.G.E., Inc., recently announced the appointment of Charles Lockhart, Jr., as assistant southern district sales manager. Mr. Lockhart will assist J. H. Swallow, southern district sales manager, in the coordination of Bryant sales and promotional activities for the entire south.

Mr. Lockhart was employed by the Sun Oil Co. prior to joining the Lone Star Gas Co. in 1938 as district salesman. After serving as a major with the 3rd Army, he again joined Lone Star as manager, dealer sales department, general division, in which capacity he has served until now.

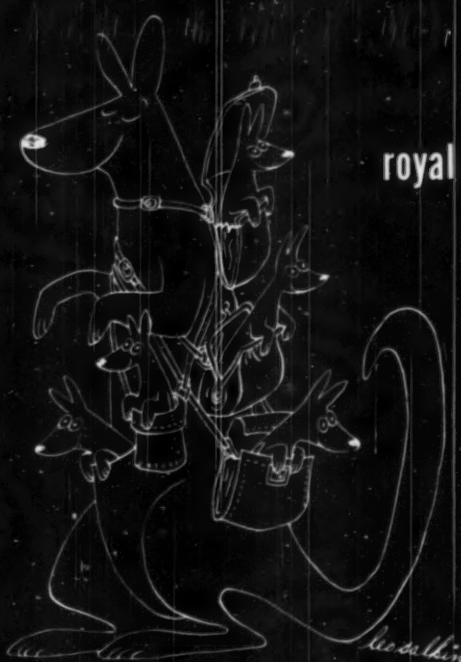


Charles Lockhart, Jr.



Kenneth W. Mayer

THE BOARD OF DIRECTORS of Van-Packer Corp., national manufacturers of packaged chimneys and industrial stacks, has announced the promotion of Kenneth W. Mayer, general sales manager, to vice president in charge of sales.



royal jet-flow

fits any pocket-book

ROYAL JET-FLOW selected for "Better Homes and Gardens" \$20,000 Five Star Home No. 2004—Designed and built by Cliff May.

ROYAL JET-FLOW selected for 451 homes for Negroes built by Folmar-Flinn in Montgomery, Alabama. House and lot complete sells for \$5200.

Write to Royal Heaters, Inc., Alhambra, Calif., for complete information on AMERICA'S OUTSTANDING HEATING UNIT — THE ROYAL JET-FLOW.

EARL E. BARR has been appointed Janitrol sales representative in the Kansas City district, as announced by H. C. Gurney, sales manager, Janitrol Domestic-Commercial division, Surface Combustion Corp.

Mr. Barr will work in close association with Wallace A. Adams, Kansas City district manager, in the sale of the complete line of Janitrol heating equipment.

Since 1936, Earl Barr has been in the employ of the Ohio Fuel Gas Co., Elyria, Ohio, serving in the capacity of heating supervisor. During World War II, he spent five years in the Air Transport Command of the Army Air Force.



Earl E. Barr



T. A. Crawford

WALTER F. ROCKWELL, president of the Timken-Detroit Axle Co., announced the election of T. A. Crawford as a vice president of the company. Mr. Crawford will continue as general manager of the Timken Silent Automatic Division of the organization.

Mr. Crawford has been with Timken-Detroit since 1926, starting as a retail oil burner salesman. He was appointed a factory branch manager in 1928, advertising and sales promotion manager in 1930, and in 1934 was promoted to general sales manager of the Timken Silent Automatic Division. In 1944 he was made general manager of that division.

For many years he has been active in the affairs of national trade associations in the home heating field. He is presently a board member and chairman of the Publicity Committee of the Oil-Heat Institute. He is also a member of the board and treasurer of the Stoker Manufacturers Association.



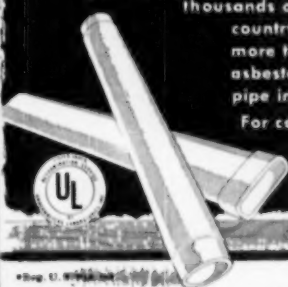
THE DREIS & KRUMP MFG. CO., 7400 S. Loomis, Chicago 36, Ill., is planning to demonstrate at the coming National Metal Exposition the production advantages of their Chicago press brakes and Chicago hand-operated bending brakes. Their exhibit at Booth No. 1620 will include actual production work on a press brake equipped with various attachments and tools for press brakes. Specialists in press brake and bending brake applications will be in attendance at the booth for consultation.


DRAVO CORP., Pittsburgh, Penn., announces the opening of a Boston sales office at 79 Milk St. This office will handle the sale of Dravo Counterflo heaters for industrial and commercial warm air heating and Dravo

OVER 50,000,000 ft IN SERVICE!

For more than 20 years, Johns-Manville Transite® Flue Pipe has proved its dependability and economy in thousands of installations throughout the country. To date, there have been more than 50,000,000 feet of this asbestos-cement pipe used for flue pipe installations!

For complete details, write for Folder TR-84A. Address Johns-Manville, Box 290, New York 16, N. Y.



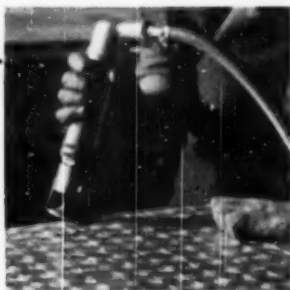


Johns-Manville TRANSITE FLUE PIPE

FOR VENTING DOMESTIC GAS-BURNING APPLIANCES

APPTON SUPER HAMMERS...

Seal Pittsburgh lock seams with speed and smoothness



Sealing Pittsburgh lock seam



Chipping



Riveting

In addition, the Appton Super Hammer can be used for installation of equipment, maintenance — for chipping, drilling, gouging, trimming, small riveting, cutting, scaling, caulking, etc.

This high speed hammer actuates on contact with work — develops no recoil — force of blow adjustable — economical air consumption — weighs 4½ pounds.

DISTRIBUTOR FOR APPTON SUPER HAMMER

BURGESS THOMAS COMPANY General Sales Office, 80 Broadway, New York 5, N. Y.
Bloomfield, N. J.

Manufacturers' Agents

Are you interested in securing additional lines?

We are occasionally asked by our manufacturer advertisers to suggest the names of manufacturers' agents in various sections of the country whom they can contact in regard to representation of their warm air heating, residential air conditioning and sheet metal products.

If you would like your name listed on our records for inquiries we may receive on your territory, we invite you to write us. There is no charge in connection with this service.

American Artisan

6 N. Michigan Ave.

Chicago 2, Ill.

... minutes mean

money — you'll save them
on installations because

YOUNGSTOWN FITTINGS FIT!

We don't have to tell you that minutes lost on jobs add up to hours of overtime at the end of the month. It's a simple fact that fittings which have to be cut and juggled eat in to your profits, so it's foolish to use them. Concentrate on Youngstown's ... save those minutes of installation time, they'll leave you free to look up more profitable jobs.

If you're not now one of our satisfied customers ... contact your jobber today. He'll supply you with genuine Youngstown's and you'll see the difference for yourself.

... remember

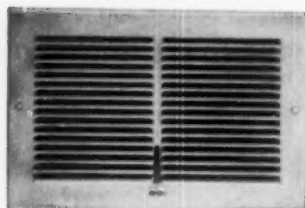
YOUNGSTOWN FITTINGS FIT!

YOUNGSTOWN FURNACE CO.

627 Marshall Street

Youngstown, Ohio

SAVE TIME By Using



**AND
WATCH
YOUR
PROFITS
INCREASE**

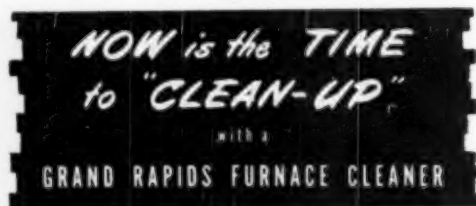
Here's A Single Valve Register with the Valve Hinged at the BOTTOM!! For use in Basementless Homes where the Conductor is Dropped from above the Register. Ask your Supplier, or Write:

THE A & A REGISTER CO.

8327 Clinton Rd.

Cleveland, Ohio

Geo. G. Auer, Pres.



Act Now! Get in on this year's cleaning profits. Order a Grand Rapids Furnace Cleaner.

IT'S FAST—Handles twice as many jobs as the ordinary furnace cleaner.

IT'S THOROUGH—High velocity suction completely removes ashes, soot, scale and dirt from every type of heating plant.

IT'S COMPLETE—A packaged unit with practical cleaning attachments designed for fast, easy cleaning.

IT'S PROFITABLE—The trouble-free operation and speedy service of the Grand Rapids Furnace Cleaner puts extra profits in your pockets.

Send today for complete information about the Grand Rapids Furnace Cleaner.



DOYLE VACUUM CLEANER CO.

227 Stevens St., S.W.

Grand Rapids 7, Michigan

crane cab conditioners for cooling, filtering, heating and fume removal in industrial crane cabs.

R. M. Barnes, northeastern sales and service manager of the Dravo heating department will be in charge of the office. In addition to the metropolitan Boston marketing area, the territory covered by this office will include Worcester county and the state of Rhode Island.

INTERSTATE MACHINERY Co., Inc. of Chicago announces plans for a machinery fair and open house, October 23rd through 28th coinciding with their exhibition at the National Metal Exposition at the International Amphitheatre.

All visitors to the exposition as well as local manufacturers are welcome from 9 a.m. to 9 p.m. at the Interstate fair and open house staged in their warehouse and plant, 1431 W. Pershing Road. Refreshments and buffet meals will be served.

Roberts—

(From page 60)

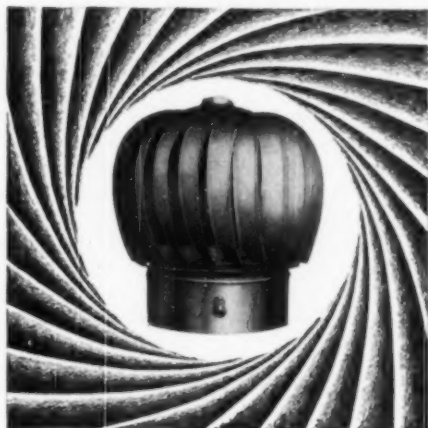
derneath. Often negligence in matters of this kind gives the taxpayer concern later on if his books are checked by the Treasury. Details of a transaction, which were crystal-clear when it occurred, grow dim with the years and the Treasury may audit your records for a number of prior years. So, write a complete case history of all unusual transactions in your books at the time they occur.

- 10 *Miscellaneous supporting papers.* Contracts covering business transactions, cancelled notes for money borrowed, invoices for purchases, insurance policies, profit and loss statements, property tax receipts, state and sales tax records, truck mileage records if gasoline tax is deductible, financial statements and all other papers having a bearing on income and outgo should be filed systematically, alphabetically or by month, with the other auxiliary records mentioned in this article.

Too many dealers let their desk drawers, closets, bins or cabinets become a catch-all for sundry papers pertaining to transactions, that indirectly touch upon profits and tax. Get yourself a metal file for the systematic storing of business papers. Keep a tax file also. Put everything in this file pertaining to tax—returns, receipts for paid taxes, cancelled checks covering tax payments, withholding slips, tax notices, etc. You never know when you may need these documents and too often they are scattered all over the office. Keep clippings pertaining to tax in this file. During the year, decisions of the tax board and courts, which may have a bearing on your annual return, will come to your attention in business papers or elsewhere. File this information in the tax file because it may save you money. Keep copies of all tax returns. You never know when you may have

UNO VENTILATORS

"Sure as Sunrise"



The spinning head of the wind driven UNO TURBINE creates a partial vacuum giving it far greater exhaustive capacity than any stationary ventilator.* Originally developed by UNO to overcome chimney downdrafts, this ruggedly constructed unit is daily proving itself on industrial and public buildings while exhausting fumes or dead air spaces:

Moderately priced, the UNO combines economy of operation with an efficiency unmatched in any non-motorized ventilator.

UNO MOTOTURBS incorporating specially designed totally enclosed motor fans also available. Standard construction includes copper, stainless, and attractively painted galvanized steel. Dampers and flat or pitched roof bases available at nominal extra cost.

*As proof of this ventilator's wind created pulling power, an 8" unit, spun by hand, will lift tissue paper off the floor.

Jobbers throughout the country

Write for literature today

UNO VENTILATOR CO.

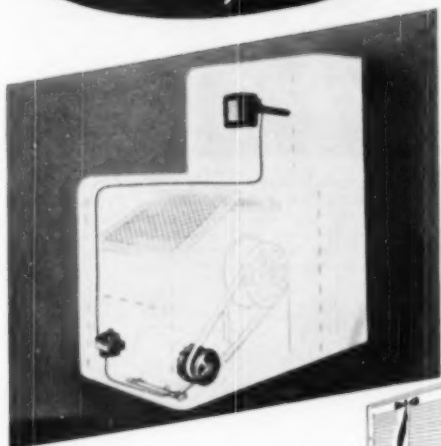
P.O. BOX 1301

SAUGUS, MASS.

the MASTER BLOWERTROL

NOT JUST A RUSH OF HEAT—

*It's comfort
flowing in*



GIVE YOUR CUSTOMERS THE COMFORT THEY WANT FROM A WARM AIR HEATING SYSTEM

MASTER BLOWERTROL is what every forced air system needs to give REAL comfort in the home. Used on new installations or jobs already installed, it makes a more satisfied user of forced air heating.

WHAT IT DOES —

It gives your customers — at a cost within their reach — a control that will end chilly drafts, hot and cold layers of air, and "cold 70". It creates another satisfied customer for you. Every Master Blowertrol adds one more confirmed user of forced air heating to the ever-growing list.

HOW IT WORKS —

It starts the blower motor at a plenum temperature of 100 and then gradually increases the speed of the blower as the temperature rises until it reaches 125. The blower operates at full speed until the plenum temperature drops below 125 at which point it gradually decreases speed as the plenum temperature drops.

Write for Full Information



The **WHITE MANUFACTURING Co.**
2368 University Avenue
St. Paul, Minnesota



Just a breeze

...keeps Western Rotary Turbine Ventilators in operation, providing constant round-the-clock exhaust. Western's lifetime-guaranteed bearings are both mounted on the same axis...always stay in alignment...stand up to shipping jolts. Throat sizes from 6" through 48". The typical, clean, attractive silhouette that progressive industry demands. Western turbo-ventilation...high in efficiency, low in cost.

Request our catalogue for information, sizes, capacities, price lists. In 1950 Sweets and A. E. C. Jabbers are invited to participate in our national sales system.

"Always on the job—never on the payroll"

WESTERN ENGINEERING & MFG. CO.

1726-78 E. WASHINGTON BLVD. LOS ANGELES 21, CALIF.

CUT ANY SHAPE WITH A

BEVERLY

IN METAL UP TO 3/16" MILD



With one Beverly Throatless Shear, you're equipped to make any cut in metal—straight, curved or irregular—faster, easier and more economically. Positive rake of the high grade tool steel blades produces neat, clean, burr-free cuts in any metal up to capacity. Made in 4 sizes to handle 10 ga. to 1/4" mild.

FEATURES:

- Compound leverage—easiest cutting in heaviest metals.
- Alloy steel rack and pinion for positive cutting control at all times.
- Exclusive shoulder design permits turning work at any point of the stroke.
- Interchangeable blades adjustable for wear and re-sharpening.
- Alloy steel body—eliminates distortion and misalignment of blades.
- High carbon, high chrome blades available for all metals to handle stainless steel.

Diagram at right illustrates cuts made with a Beverly in light gauge metal.

BEVERLY SHEAR MFG. CO.
3020 WEST 111th STREET CHICAGO 43, ILLINOIS



to refer to them in the event that the Treasury makes a survey of your returns for a number of prior years.

Many *Indoor Comfort* dealers and sheet metal contractors assume that the savings on tax lie in the transfer of the figures from the books to the return and their listing in the proper places on the form. This procedure covers only the mechanics of income tax. The real savings lie behind the figures on the return, in the supporting records you keep, the way you handle inventory and depreciation, the recording of all expenses and liabilities during the taxable year—and such savings are not made at filing time, they are effected throughout the taxable year.

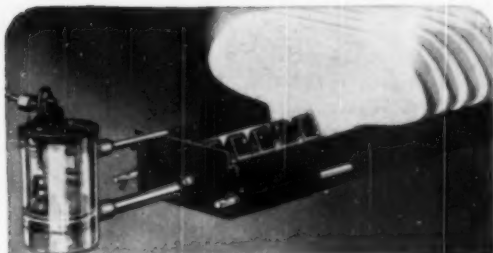
In fact, when filing time comes around, it is often too late to effect all possible savings because the method by which transactions have been recorded or handled cannot be revised after the year is over. The Treasury is concerned with only the actual gains and losses that were duly recorded within the taxable year, not at some time during the following year. Complete and correct supporting records will help you get maximum deductions and help you justify them if the Treasury asks for information.

Washington Letter

(From page 64)

have already beset them. But there is no question, with the rapid development of production for defense, difficulties will arise, both in the supply of steel and in the manufacture of the things required by the military. The manufacturing schedule will undoubtedly make it necessary for Administrator Harrison to preempt the entire facilities of many plants that are now producing things supplied to the sheet metal industry, and others. And, of course, there will be manpower and transportation problems.

At present the problem mainly is allocation of materials to the military. When the materials become scarce it will be necessary for the administrator to put the priorities machinery in operation. From present indications it seems probable that this problem may be immediately around the corner in relation to aluminum, copper, zinc, and other metals, more than in relation to steel. In order to meet this situation there is, in preparation, an order which they speak of in Washington as a regulation for the concentration of priorities. It is not entirely clear what this term means. It is supposed the concentration of priorities is intended to function very much like the example described above. Assuming that rubber, textiles, leather, chemicals, forest products, food, fuel, etc., become scarce, those who must have them for the operation of their industries, either for military production, or for civilian production, will first await the action of those who allocate to the military, and then will depend on the agencies which represent their civilian interests, to present their claims to the unit which deter-



**We Have THE Complete Line
of Humidifiers
for Warm Air,
Air Conditioning, or Steam Heat!**

Monmouth Flotral Humidifiers—For average and larger air conditioning and forced air jobs, the last word in reliability and super-service!

Monmouth Micro-Feed Humidifiers—The simplest, most dependable drip-feed unit adaptable to a wide range of jobs. Low in cost, but well built and accurate in performance.

Monmouth Flotral "310" Small Humidifiers—A true Monmouth quality product, designed for small furnaces (up to 100,000 BTU) and very economically priced. Easy to install. Includes all necessary parts.

Monmouth Humidity Conditioners—A self-contained, gas fired, independently operating unit, engineered for use with any radiator heating system. Controls are synchronized with the heating plant.

For the BEST in humidifiers—for any purpose—consult the experts—Cleveland Humidifier.

THE CLEVELAND HUMIDIFIER CO.

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**MONMOUTH
HUMIDIFIERS**



*Picture of
Profits!*

Of course, our fittings are fabricated with extreme care and delivered to you with a minimum of delay—and when they are "Made-Rite" you know the job will be well done.

We are ready and anxious to deal with you and you'll be pleasantly surprised at the completeness of our line and dependability of our service.

We solicit inquiries on slitting of metal up to 36 inches wide and 14 gauge and lighter.

"Made-Rite" Co., Inc.

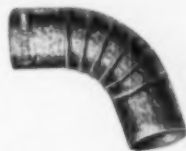
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THE CINCINNATI ELBOW COMPANY

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**ALL SIZES
ALL ANGLES
ALL GAUGES
ALL METALS**

See Your Jobber



**CONDUCTOR PIPE
ELBOWS and SHOES**

**ANCHOR
AIRE**

*The Big Name In Winter
Air Conditioners Is...*

**DUO-BILT
FOR GAS OR OIL**

This Anchor Winter Air Conditioner operates equally well as a Gas or Oil Furnace. Anchor makes a COMPLETE Line of winter air conditioners to consume pressure oil or vaporizing oil, natural, manufactured or L.P. Gas. Forced air and gravity types are available in sizes and capacities to fill virtually every residential heating need.

The Anchor "Fuel Saver" heating element provides for long, indirect heat travel and large heating surface.

Both the Winter Air Conditioners and the Gravity Circulating furnaces are encased in attractive, eye-appealing cabinets making these units "at home" in the most modern basement or utility room.

Write today for detailed literature and prices.

ANCHOR DIVISION, STRATTON & TERSTEGGE CO., INC.
P.O. BOX 311, NEW ALBANY, IND.



Lo-Boy



**WHITNEY METAL
TOOL COMPANY**
39 YEARS EXPERIENCE



WHITNEY-JENSEN
OUR NEW
CATALOG
Shows an Extensive Line of
PUNCHES — SHEARS
FOOT PRESSES — POWER PRESSES
DIES and SMALL TOOLS
Send for Your Copy Today

WHITNEY METAL TOOL COMPANY
91 FORBES STREET, ROCKFORD, ILLINOIS

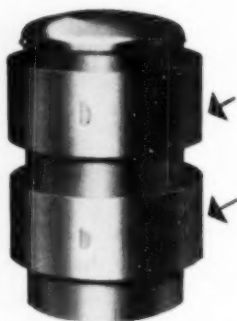
**For positive drafts
sell the NEW exclusive**
Coleman twin ring
CHIMNEY CROWN

• Prevents downdraft. Makes use of air currents from any angle or direction to create suction for a positive, even draft. Increases heating efficiency without waste of heat or fuel. Helps keep chimney dry and clean. Neat, no noisy moving parts. In 6 sizes.

Also new Coleman Adapter to simplify installation—makes Coleman Chimney Crown fit 90% of chimneys.

Write for complete description and prices

THE COLEMAN COMPANY, Inc., Wichita 1, Kansas



mines priorities. It will be the function of this unit to set up the schedule which will designate the order of the priority in which the material is distributed to the various civilian claimants.

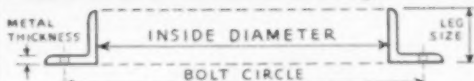
The sheet metal industry, for instance, first will discuss its problems with Nelson Miller's Office of Civilian Requirements. It will also take up its problems with Mr. Hayes who is head of the division of steel and iron, and of metals and minerals, in the Bureau of Industry Operations. From this springboard, the problems will go to the Bureau of Program Determination, where, in all likelihood, the order of the conflicting claimants for priority will be determined. The Bureau of Program Determination undoubtedly will take the opinions and conclusions of the Office of Civilian Requirements and the Bureau of Industry Operation and present them to the unit that functions immediately under the administrator on the final determination of priorities.

In those rare cases where no decision is reached in this unit, the problem will go to the administrator, and, if necessary, he will present it to the Secretary of Commerce. In the event that the conflict brings a direct clash between the interests of various agencies, and the Department of Commerce, which is one of the major claimants on behalf of those it represents, the final decision (under the President), will then be with Coordinator Symington.

NPA Regulation No. 1, the inventory control order, was concurrent with the mailing of questionnaires to every level of business. The inventory control order exempts only those buying for personal or household use. It lists cement, gypsum board, alcohol, benzene, caustic soda, chlorine, glycerine, soda ash, soft wood and hard wood, plywood and wood pulp. The metals category is the largest. It includes pig iron, grey iron castings, steel, ingots and semi-finished steel, which includes tin plate, terne plate, black plate, hot-rolled sheets and strip; also cold-rolled sheet and strip; galvanized sheet and strip; electrical sheet and strip. Also forgings, and iron and steel scrap. The other metals include every description of aluminum, columbium, cobalt, copper, magnesium, manganese, nickel, tin, tungsten, zinc. Finally rubber materials, and textile materials, such as burlap, cotton pulp, rayon yarn, and nylon yarn.

Coordinator Symington has done a good deal of talking about what will be done to chiselers and hoarders. The general impression in Washington is that this order imposes the mildest form of allocation control the imagination can conjure. They think it could not be milder. It limits stocks of the listed materials to what is vaguely called "a practical minimum working inventory" governed by the "ratio maintained between inventory and operations during the recent past". It should be remembered in the recent past the materials under control have been used to an extent never before known in peace time. Penalties are indicated for violations, but they lack the usual sharp definition. Moreover, NPA, at this time, does not have the kind of staff necessary to police and enforce the regulation. These observations,

ANGLE RINGS *to Order*



Send Us Your Specifications

Fill out the above dimensions and we can give you an immediate quote in any quantity desired. Accurately rolled to specifications with open or welded joints—with or without bolt or rivet holes.

We also roll tees, flats, rounds, channels, pipe and tube, into rings or ring segments. Uses: Joining pipe or smoke stack sections; Reinforcing rims for tanks, vats, drums or circular guards; Bases for fan and other installations.

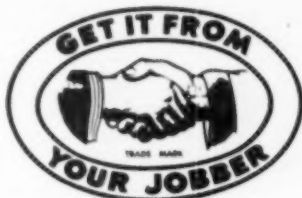
Write for our list of stock sizes and discounts — also our circular describing our fabricating services.

Phone Bishop 7-4255

National Metal Fabricators

2140 SOUTH SAWYER AVENUE — CHICAGO 23, ILL.

Midco Register Corp.
1059 Grand Ave.
St. Paul, Minn.



Registers — Grilles — Floor Faces —
Floor Registers — Gravity Registers.
The complete quality line for all winter and summer air conditioning.



Another Money Maker For You



The New CONCO PORTABLE Electric RADIATOR

RETAILS

Regularly at

\$22.95

4500 BTU

OUTSTANDING FEATURES

SAFE Underwriters' Approved. No liquids used. Consumes 1320 watts, A.C. or D.C., emitting 4500 BTU's per hour the equivalent of 18½ sq. ft. of steam radiation.

FAST Starts heating as soon as plugged in. Radiation and convection heating provide warmth to all parts of the room.

LIGHT Easily portable. Weighs only 28½ pounds. Carrying handle doubles as drying rack.

ECONOMICAL Heats for one hour for approximately 2 cents, average U. S. rate. Write for complete information.

CONCO ENGINEERING WORKS, Division
of H. D. Conkey & Co., Mendota, Illinois

AFFILIATES:

Conco Materials Handling Division, Cranes — Hoists
Conco Building Products, Inc., Brick — Tile — Stone



NONE BETTER BUILT THAN E-Z-ON DAMPER REGULATORS

Order from your Jobber

M. A. GERETT CORP.
MILWAUKEE 5, WISCONSIN

...got repair problems? Let **NORTHWESTERN** solve them for you!

Problems in repair parts are our specialty. We know how much prompt service on hard to get items means to you, so we've trained our staff to fill each and every order, large or small, with a minimum of lost time.

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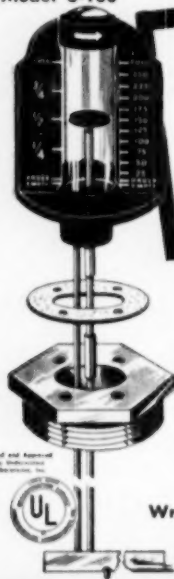
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The Mel Tank Gauge is for depths 22"-24", 26"-27", 42"-44", and special sizes; for openings with 1 1/2" or 2" pipe thread.

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however, should not be construed as advice to evade the regulation in any sense. As a regulation its liberality should be its own answer to any complaint.

Robert S. Goodwin is director of the Labor Department's Bureau of Employment Security. It seems assured he will be the head of the Labor Department's NPA Manpower Organization. They tell us he is the best official in Washington for the purpose. He announced an interim manpower mobilization program calling for immediate spot check of the manpower supply and demand in 2,000 communities. He stressed it is increasingly necessary to make the most complete use of the manpower you have before recruiting more workers. Workers for defense plants, those serving defense plants and agricultural employers, are classed as preferential, meaning these classifications in industry get the first choice in the supply of workers. Goodwin already has started the machinery to recruit women and handicapped persons.

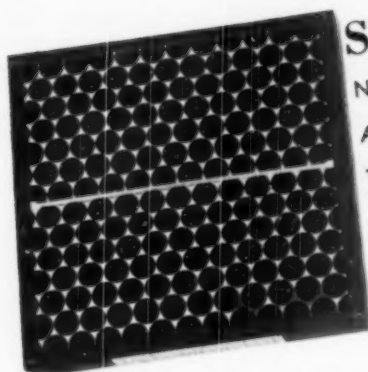
The present situation is regarded as a race between the election dates and the absolute necessity for imposing price and wage controls. Truman wants the election dates to win, but it was expected the controls may have to be imposed sooner. Recent increases ranging from 8 to 15 cents have a definite inflationary effect. Purchasing power bids prices up. The increases push up the prices of material and the prices of finished goods. It is expected the permanent pattern of increase will stabilize at something between 10 and 12 cents. Truman seems to fear he may have to invoke the controls, because he asked Congress to give him \$60 million to administer them.

Incidentally, industrial production reached a new high in August, at an index of 205 of the 1935-39 average. This was 8 points over July, and 10 points over all other postwar peaks. Much sprang from heavy expenditures for new industrial plants and equipment. Railroads placed large additional orders for freight cars. Machine tool builders recorded the largest business any time within five years. One effect has been the movement for higher wages. There is much speculation in regard to what will really happen when the strained economy gets the impact of war spending.

It may interest you to know that the tax increase, between \$4.5 billion to \$5 billion, is estimated by tax experts as a potential of actual yield, due to the rising tempo of business and higher levels of national income, of something between \$8 billion and \$10 billion. Excise taxes were extended to television sets, deep freezers, slot machines, auction sales of furs and jewelry, and other products. The combined rate of increase for normal and surtax on corporate income jumps from 38 to 42 per cent on 1950 incomes, and to 45 per cent on 1951 incomes.

Provisions are made for prorating the increase on companies having fiscal years ending otherwise than December 31; and for preferential treatment of the large number of small corporations, by taxing the first \$25 thousand of taxable income, 23 per cent in 1950,

The PLASTI-STATIC AIR FILTER *features*



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NEW
AIDS
TO
AIR
CON-
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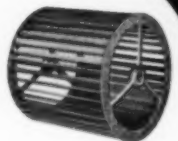
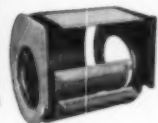
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Air Conditioning Furnace Blower Assembly. Designed for manufacturers of warm air furnaces and Air Conditioning equipment. Wheel Sizes 7½" to 27"



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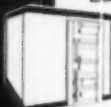
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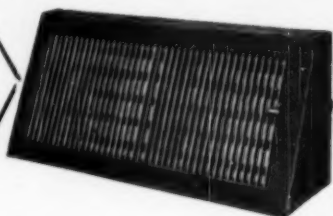
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REGISTERS
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and 25 per cent in 1951. The objectionable "notch" provision is thus wiped out which had high rates to bridge the gap between \$25 thousand and \$50 thousand income. Tax of 40 per cent on corporate income is a new high for all time. Individual income taxes are back to wartime peaks. But the liberal dependency allowances, and the split in the income of joint returns in computing the total tax payable, has not been changed. The tax payable on 1950 income will be computed on the total income for the full year of 1950 with adjustment for the fact that the higher rates apply for only one-fourth of the year. This is done to avoid complication of having to divide the year's income to compute the taxes on each part separately. Withholding taxes will rise October 1, 1950 from 15 per cent to 18 per cent. Under the new bill the combined normal and surtax rises to a maximum of 91 per cent.

It is forecast this interim tax measure, quickly cooked up and passed, will be followed up after the first of the year by additional tax legislation, which will be more complicated and probably far more controversial. It is anticipated it will be necessary to raise perhaps \$7 billion, \$10 billion more taxes next year, including the corporate excess profits tax, a tax on cooperative organizations, and a tax on increased individual income. A congressional committee is studying the problem. There is to be a broad extension of manufacturers' and excise taxes, and a universal federal sales or transaction tax. It is interesting to note in 1949, according to report of the Department of Commerce, total taxes — federal, state and local — aggregated \$55 billion, an average of \$360 for every man, woman and infant in the United States. The average family of four was taxed \$30 a week, direct and indirectly. This placed a burden of \$15 a week on a young couple starting in life.

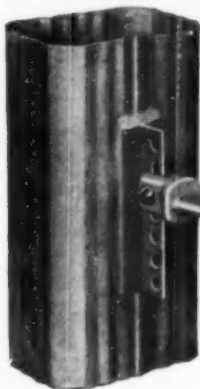
National defense outlays, including foreign military aid, are expected to rise to somewhere between \$30 and \$50 billion during the next year. Our other expenses this year total \$29 billion. Some hopeful bureaucrats suggest these may be cut back to \$20 billion in the next fiscal year. Of course if non-essential expenditures and projects could be postponed or abandoned that might be possible. With the prospect of between 40 and 60 thousand new employees in the three months ahead, further expansion of federal government personnel in the months beyond December, and the bestowal of permanent status on all temporary employees numbering something like 20 thousand by Truman, there seems little prospect for reduction in the civilian budget.

To teach businessmen how to do business with federal government, a group of high-level officials have been holding clinics in various parts of the country. The usual combination consists of Harry Blythe, Chief of Industrial Mobilization Planning and adviser to chairman of the Munitions Board; Commander Philip Ashler, chief, Small Business Division, Department of Defense; Clifton Mack, director, Supply Services, General Services Administration; Walter J. O'Donnell, chief, Small

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(either flat shape for brick or round for wood) is bolted to galvanized or copper perforated clip. This clip is soldered to back of conductor. Easy to solder, as clip is made of same material as conductor. You get a nicer appearing job — fastener is wholly concealed. Pipe stands $\frac{1}{2}$ " away from wall, which is preferable.

Contractors who take pride in their work like to use this practical, durable, inexpensive device on their jobs. For details and list prices write your jobber or us.

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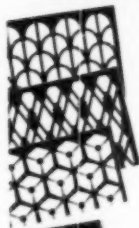
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Frames, louvers, invisible hand hole doors and registers can be furnished to meet exacting specifications.

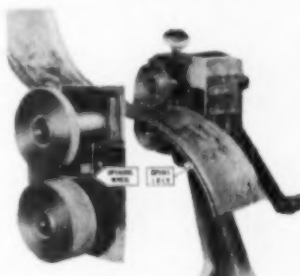
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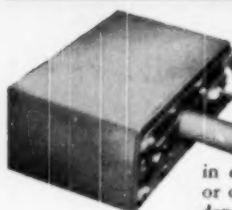
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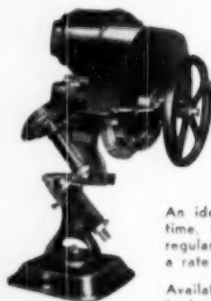
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Business Division, Reconstruction Finance Corp. These clinics have been held in Seattle, New York, Chicago, Minneapolis, Fargo, Portland, Kansas City and in Oklahoma and Texas.

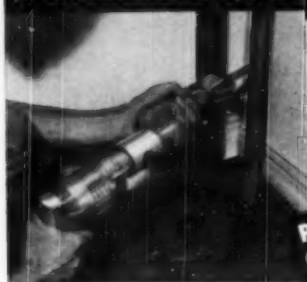
If you wish to sell to the government, or plan to convert to war production, or do any business with the federal government in connection with the expansion ahead, it will pay to join with others to bring this panel of Washington officials to the community. As a rule, anywhere from 1,000 to 3,000 people attend these conferences. The four officials very sincerely try to answer all questions and to supply every possible bit of information. The undertaking is part of the effort to prevent crowds from coming to the capitol as they did during World War II. The best way to secure the cooperation of the group is to ask your Senator, or Congressman to take it up with any one of them. Or tell your representative to take it up with Merrill F. Woodruff, business specialist, Department of Commerce in Washington, D. C. He, likewise, occasionally appears with a panel. They usually appear at a morning session, a luncheon session, and an afternoon session, with plenty of opportunities for questions.

Through the Department of Commerce, either in the field offices or by writing to Washington, D. C., you can obtain information about invitations for bids on contracts, and a list of all contract awards amounting to \$25 thousand or more. These lists cover orders from 55 defense procurement offices of the three military branches, and 22 procurement branches of the general administration offices. The lists of invitations for bids are issued daily. The bidding date is usually two or three weeks distant from the time the bulletin is issued. The contract list is published weekly, giving the type and size of the contract and who secured it. This enables those who are interested to compete for sub-contracts. You can obtain a government procurement manual, indexed for quick reference, from the Office of Small Business, Department of Commerce.

Various Government agencies insist it is not necessary for businessmen to come to Washington to obtain contracts. Superficially, this statement is correct. Actually, it is misleading. It is eternally true contracts may best be obtained where the office of the procuring agency is located. Most of these offices are in Washington. Most of the business is done in Washington. Despite warnings issued by the government people, businessmen who obtain the business, either large or small, are those who establish their own contacts in Washington.

Either they maintain an office here, or they make arrangements with competent persons who know their way around in government. The secret of getting an order in Washington is to know where to go, and who to see, and when to see them. Generally, the individual, or the office that has the determining influence, is not the one about whom you hear through formal sources. Most frequently it may be some person who shuns publicity. It is for this reason that the representative in

TRI-SAW All-Purpose Portable Power Hacksaw



**Makes Any Cutting
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T18 Setting Hammer 18 oz.



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Made in Black or Polished

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One piece head and handle prevents breakage and splintering.

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STANDFORATED**
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"BEND-EZY"

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The Standforated "Bend-Ezy" sidewall registers are stamped from sheet metal and have horizontal bendable bars, set at time of fabrication for 30 degree downward deflection. Each bar can be easily readjusted with a "Bend-Ezy" tool to any angle for upward, downward or straight flow.



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Washington is almost invaluable. He knows where to go, and, particularly, he knows when to follow up.

There is a technique about doing business with government that the average person from the outside does not know. Also, there are many byways and highways that must be explored in order that a piece of business may be completed. It takes tact and patience. It is perfectly natural that personal acquaintance should have a bearing on the transaction. The government official is more apt to do business with a person he knows, who knows him, and in whose word he can have confidence, than with a stranger. Also, bear in mind, that the young man in Washington who knows the ropes, can accomplish the completion of a transaction much more swiftly than a stranger from the outside. A stranger usually gets in a whirl, and goes home without doing business. These words are prompted by a realization that many who read this letter in various parts of the country will have capacity which may be used in government production when civilian production slows down. Many of them already are beginning to come to Washington. When they proceed without proper guidance, they frequently leave, disappointed and disgusted. There is money to be made here if you know how to dig it out.

Responsible quarters regard the substitution of General Marshall for Secretary of Defense Louis Johnson as foreshadowing the washing out of the Formosa policy, and the probable seating of Communist China in the

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33 1/3% STRONGER

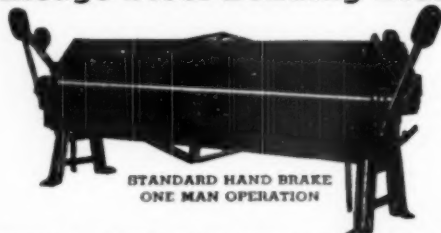
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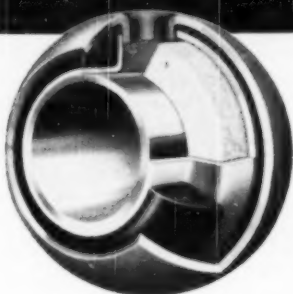
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ONE MAN OPERATION

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INCLUDE
BUILT-IN
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IT'S ALL IN
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NO EXTRA
PARTS TO
BUY OR
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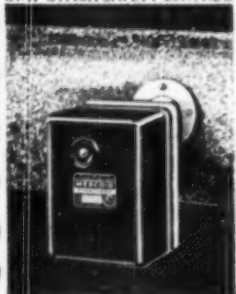
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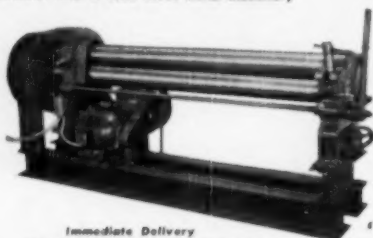
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United Nations, with our consent, although probably not with our approval. This has been in the cards for sometime. Truman obviously opposed General MacArthur's very clear statement on Formosa. What we have recently done in relation to Communist China has not shed glory on our reputation in Asia among the Asiatics.

Those who should know here, think the Marshall appointment was sponsored by Dean Acheson. He has always opposed the policy now motivating our actions in Korea and Formosa. Johnson backed them. Acheson is credited with inspiring the spirit and content of Marshall's mission to China, which was such a dire failure. He was later Marshall's under-secretary. They like each other immensely. It is axiomatic in Washington that Marshall is one of the most brilliant soldiers in all history, but that he is a flat failure in diplomacy and international politics. As Presidential adviser, he is blamed for his share of the terrible messes that resulted from Yalta, Teheran, and Potsdam. It was Marshall who unsold Roosevelt on the attack through southern Europe which had been sold to him by Churchill, and which would have been infinitely different in its political effects upon the subsequent history of the world. Purely as military policy, the invasion by way of the beaches of France was best. But, like the current policy of appeasing Asiatic Communism and Socialism elsewhere, it is fatal politics.

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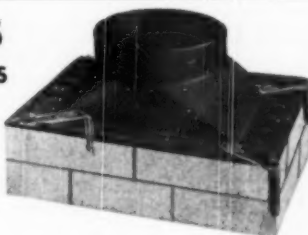
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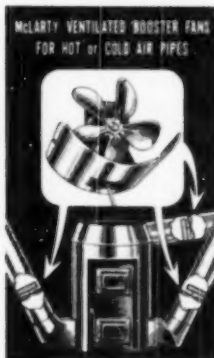
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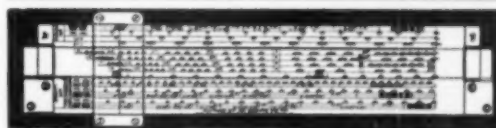
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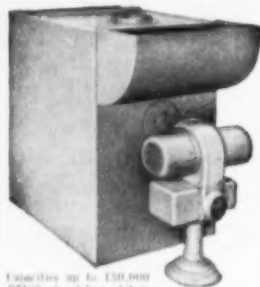
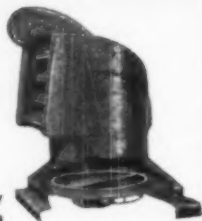
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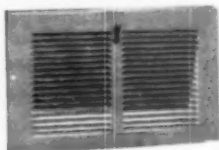
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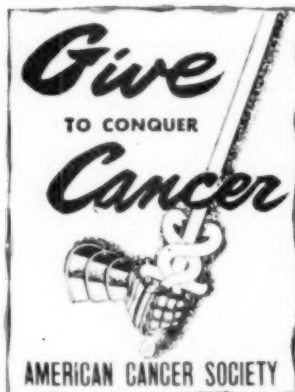
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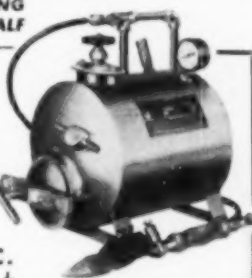
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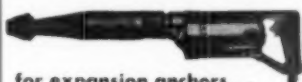


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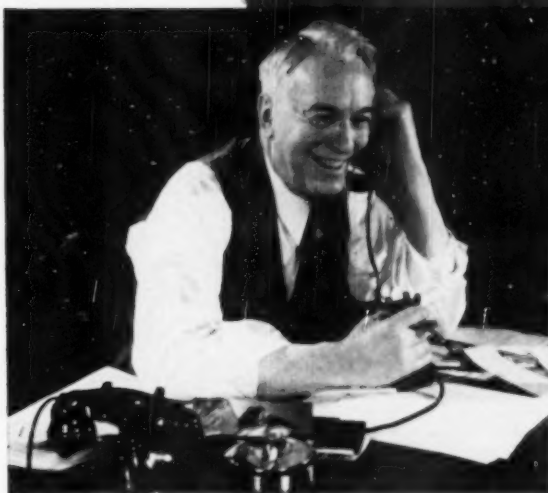
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